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The aim of the Society being to arrive at true conclusions through free discussion, it is distinctly to be understood that the Editor is not held responsible for statements made in the *Journal*.

Contributions and correspondence should be addressed to G. R. G. WORCESTER, ESQ., *Penny Cottage, Pound Lane, Windlesham, Surrey*. Although not absolutely essential, it would be of great assistance to the Editor and the Printers if articles, notes, queries, answers and reviews of books could be typed, on one side of the paper, preferably quarto, with double-spacing and with a wide margin. Owing to the high costs of production, photographs and line drawings to illustrate contributions must be restricted to a minimum, and very few can be accepted for the present, or until conditions have improved.

Names of ships should be underlined to denote *italics*, and not written within inverted commas.

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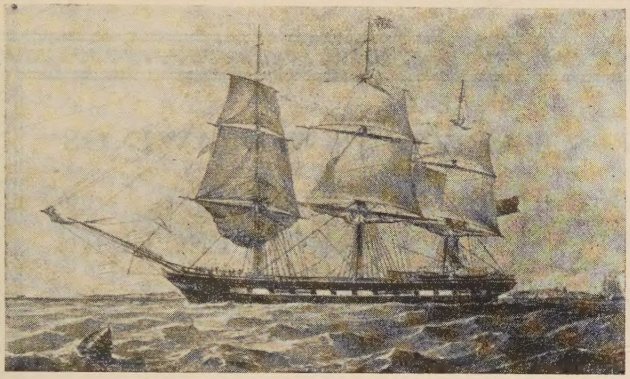

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EDITORIAL NOTES

On taking over the duties of the editor of *The Mariner's Mirror* I should like the first words I write in this volume to be a tribute to my predecessor, Commander Hilary Mead, R.N., who has been the Hon. Editor for seven years. I think the highest praise that can be offered is to say that during this difficult period of paper restrictions, controls and rising prices he worthily upheld the high standard of scholarship and authoritative technical research so ably set by his learned predecessors.

Contributions on all aspects of nautical research, including especially such fields of study as nautical archaeology, will be as welcome as ever. Line drawings and maps should be in black ink on white paper. Photographs submitted for inclusion as plates should be printed on glossy paper. If an article is accepted for publication, the author will normally receive galley proofs for correction if necessary. Alteration of type, as it is carried out by hand, is a slow and expensive process; and authors would greatly assist in keeping down costs by making only such alterations as are absolutely essential for accuracy and understanding.

It is not generally known that the cost of printing has risen by nearly 150% since 1939, and that of paper by even more. The size of the *Journal* has been reduced from more than 112 to about eighty pages per issue, and the number of plate illustrations from about ten to about four. There is at present no prospect of reducing costs while maintaining quality, and the existing austerity must be continued unless income can be increased by a substantial rise in circulation or other means. G. WORCESTOR

The following has been received from a member, Mr T. A. G. Pocock, of 1*a*, Oakley Gardens, Chelsea, London, S.W. 3:

'I would be most grateful for any information related to the career or family life of Admiral Sir George Pocock. I am examining the usual sources of information but am anxious to draw upon as many sources as possible.'

PENN'S EXPEDITION TO BONRATTY IN 1646

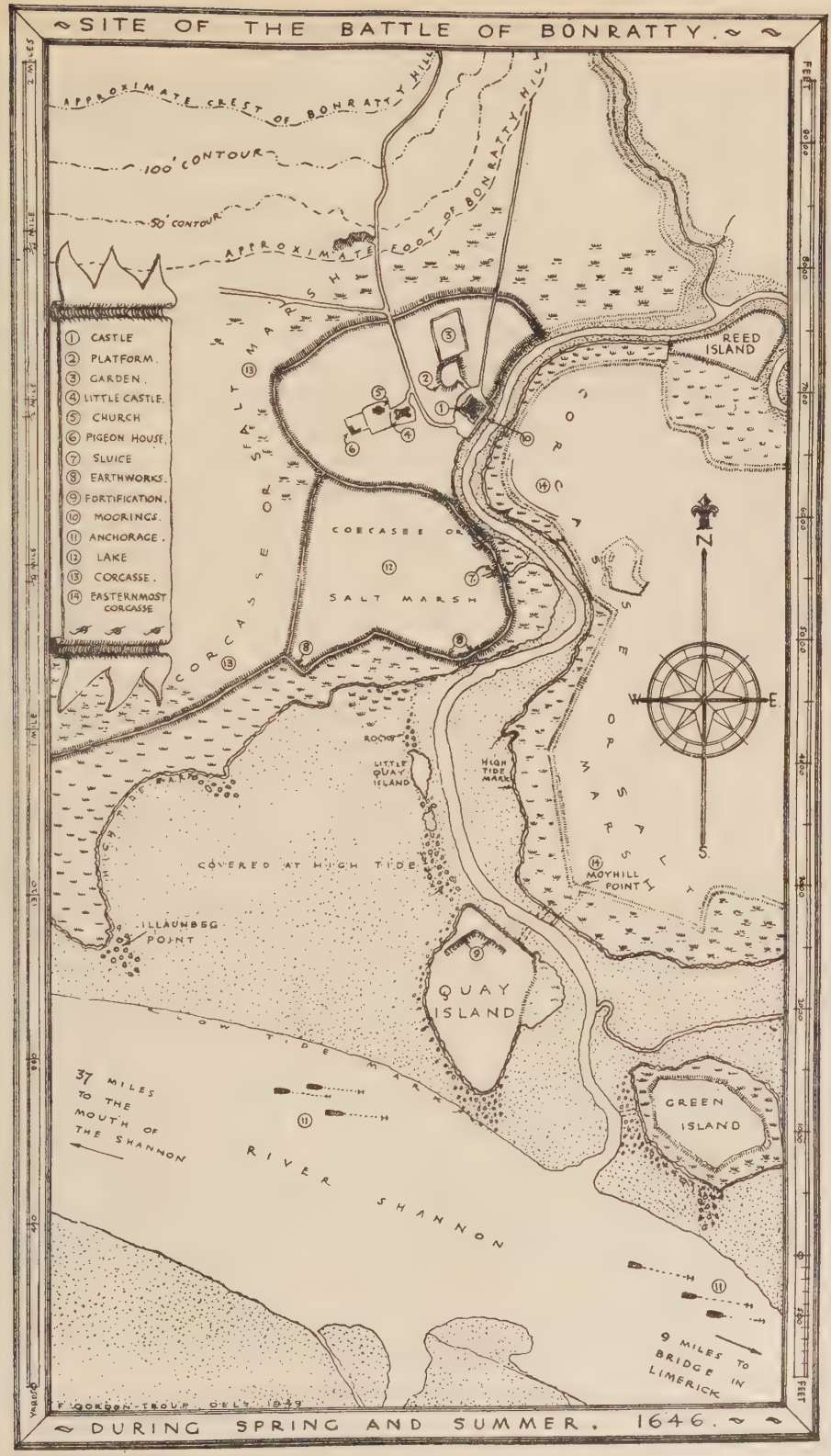
By J. R. Powell

THE collapse of the Royalist cause in England and particularly in South Wales enabled the Irish Guard, for the first time, to devote itself entirely to Irish waters.

In December 1645, Admiral Moulton had discussed at Bristol with Lord Inchiquin a plan whereby he should go 'with some strength of shipping for a design I should understand from Lord Broghill'.[1] This related to the Earl of Thomond, who had tried to remain neutral during the war in Ireland. As a Protestant he leant towards Ormonde, who, however, could give him no protection. The Kilkenny Confederation of Irish Catholics had decided to treat all neutrals as enemies. So to force Thomond to join them they ordered his tenants to pay him no rent, and they sequestrated his estates for their own benefit. Thus his position became intolerable and he decided therefore to surrender his Castle of Bonratty, situated in County Clare on the river Orgarney, about a mile from its junction at right-angles with the Shannon, to the Parliament. To Moulton it seemed that this might give him a base from which his ships could dominate the Shannon and enable Parliament, if necessary, to operate in Central Ireland. Moreover he would be in a position to deal with the privateers who infested the Irish ports. As South Wales and its Royalists appeared to be subdued Moulton decided upon the operation.

He sailed on 24 January from the Angle for Cork, leaving Crowther, his vice-admiral in the Expedition, to watch South Wales. Penn, his rear-admiral, thanked his lucky stars as he loathed that particular station. Cork was reached next day, and on the 27th Moulton and Penn went in their pinnace to interview Broghill, the Vice-President of Munster. On the 30th Broghill and his chief officers, with many ladies and gentlemen, returned the call, dining on board the *Lion*, and then passing on to visit Penn, who 'made what provision I could for a banquet'.[2] On 21 February Penn received orders to command the intended expedition, though his own vessel the *Fellowship* was to remain as a guard-ship at Cork. He transferred his flag to a frigate, the *Peter*. On 1 March he and Moulton sailed with twelve ships for Dingle Couch, where they anchored on the 3rd. Penn and Colonel McAdam went ashore to find a spot for the troops to land. By 3 p.m. the

1 Tanner MSS. 60. 567; McNeill, *The Tanner Letters*, p. 217, Stationery Office, Dublin.
2 Penn's *Life of Penn*, Vol. 1, p. 159.


SITE OF THE BATTLE OF BONRATTY.
APPROXIMATE CREST OF BONRATTY HILL
100' CONTOUR
50' CONTOUR
APPROXIMATE FOOT OF BONRATTY HILL
1 CASTLE
2 PLATFORM.
3 GARDEN.
4 LITTLE CASTLE.
5 CHURCH
6 PIGEON HOUSE.
7 SLUICE
8 EARTHWORKS.
9 FORTIFICATION.
10 MOORINGS.
11 ANCHORAGE.
12 LAKE
13 CORCASSE.
14 EASTERNMOST CORCASSE
CORCASSE OR SALT MARSH
COECASSE OR SALT MARSH
REED ISLAND
POOL
PASSAGE
SWAMP
N
W
E
S
ROCK
LITTLE QUAY ISLAND
HIGH TIDE MARK
COVERED AT HIGH TIDE
MOYHILL POINT
ILLAUNBEG POINT
QUAY ISLAND
LOW TIDE MARK
GREEN ISLAND
37 MILES TO THE MOUTH OF THE SHANNON
RIVER SHANNON
9 MILES TO BRIDGE IN LIMERICK
T. GORDON TROUP DEL. 1949
DURING SPRING AND SUMMER. 1646.

soldiers had taken both town and Castle. The fleet then sailed on to the Vintry, and at night the seamen burned all the villages and houses round the Bay. Penn, who had been left at Dingle to destroy the Castle and bring away its guns, now rejoined the ships.[1]

On 8 March the fleet sailed for the Shannon. Next afternoon it anchored before Glyn Castle and two days later Penn and Moulton, with the *Peter*, *Trial*, *Increase*, *Roebuck*, *Antelope*, *Anne and Percy* and *Green* frigate, went up to Bonratty. On the 12th he landed 700 men on Quay Island, which lay in the mouth of the Orgarney river. When he and Moulton dined with Thomond they sounded him as to his joining them. The nobleman cautiously replied he would do what he could, though he feared Penn's force was not large enough to deal with the enemy.[2]

Moulton now received news of forces gathering at Waterford for transportation to England in Dunkirk ships, and of an army of 10,000 gathered at Kilkenny for the same purpose. 'This information I was unwilling to admit, but I know not how to credit it coming from an Irishman and a Papist.'[3] Moulton, a sturdy Englishman and a stout Protestant, could not believe that any such expedition could cross the sea to England in the face of Parliamentary sea-power. But he sailed for Waterford, accompanied by Penn for part of the way down the Shannon.

On 20 March Penn, after bidding farewell to Moulton, sailed up the Shannon for Bonratty. He made an ill-omened start for his expedition, for by bad luck he shipped an incompetent pilot who proceeded to run the vessel on the top of a concealed ridge of rocks, some 6 ft. high on the north side of the river. When the tide had gone down it was discovered that a piece of plank in the bilge had been beaten in two inches into the stranded ship. With the wind at W.S.W. in stormy gusty weather the ship began to strain, so that Penn every moment expected to see his vessel shatter herself to pieces. Two planks of the weather sides broke and split, and the trunnels started. But at 2 p.m. he was greatly relieved by the sight of Liston in the *Roebuck* coming up the river and anchoring by him. After strenuous efforts in which 60 tons of rock were removed they got the ship off at 6 p.m. Liston then personally piloted both vessels up to Bonratty.[4] To guard against such a mishap it was decided that, as there was only 12 ft. of water at low tide the great ships must not be endangered by riding near the shore. Hall in the *Antelope* was sent to ride in the Shannon about a mile towards Limerick to keep a keen watch for vessels and fireships, of which Penn had been warned, coming out from that town.[5] At Bonratty Penn viewed the

1 *Ibid.* p. 160.
2 *Ibid.* p. 162.
3 Tanner MSS. 60. 567.
4 Penn, *op. cit.* p. 165.
5 *Ibid.* p. 167.

situation, and he and Colonel McAdam, who had taken command of the troops, busied themselves in planning the defences. The danger lay to the north, as the enemy had established their headquarters at Six Mile Bridge, three miles away.

An excellent description of the defences is found in the account written by Richard Bellings, secretary to the Catholic Confederation. It is accurate and careful. Bonratty Castle lay upon the Orgarney river, about a mile from its junction with the Shannon, at a point where the Orgarney makes a right-angled bend. To the east the ground was mostly marsh, covered by water at high tide. To the north, about 500 or 600 yards from the Castle was an earth ridge with a broad deep ditch without. Beyond the ditch there was an open space, some 360 ft. wide, which was terminated by a rocky limestone hill 100 ft. high. The ridge and ditch ran for 800 ft. to the west, when it turned south, passing the church, until it reached the marshy ground adjoining the Shannon and Orgarney rivers. This marshy ground was locally known as a *corcasse*, and was not, as Granville Penn, the author of Penn's life, supposed, a work for defending a gun. Here the defence consisted of a pool, whose waters were controlled by a dam connected with the Orgarney. Thus to the west and south there was a spacious plain upon which the garrison could graze their horses and cattle. On the east bank of the Orgarney there was another corcasse reaching from a point opposite Bonratty Castle down to Moyhill Point opposite Quay Island.

The space between Bonratty Castle and the ridge was fortified with earthworks, and half-way between the Castle and the ridge there was an earthen platform, consisting of the remains of the old Bailey. To the west of the platform stood a small castle, and beyond it a church, with a pigeon-house built on the south-west corner of the churchyard. These all stood on slightly rising ground, and were defended by the ridge and the ditch. It had been intended to fill this ditch with water from the Orgarney, but as it was a difficult bit of work it had not been accomplished.[1]

Penn and McAdam decided that the platform should be raised and floored so that four guns could be mounted upon it. On 1 April they determined to attack the Irish in their quarters at Six Mile Bridge, almost directly north of Bonratty. At 5 a.m. to their intense surprise 120 horse and 300 foot suddenly appeared with the object of firing some houses near Bonratty. They had set some alight when the alarm was given, and a party of 25 of the garrison's horse charged out upon them. A lucky shot wounded Captain McGragh, the leader of the attack. Panic at this disaster seized the Irish troops and horse and foot fled pell-mell. McAdam's men instantly

1 Gilbert, *History of The Irish Confederation and the War in Ireland*, 1888, Vol. v, p. 20.

took up the pursuit, killed 80 of the foe and took 100 prisoners, among them the wounded McGragh. No Parliamentarian was even hurt. Elated by their early success Penn and McAdam set out with 50 horse, 600 foot and two drakes, a type of light field gun, and marched to Six Mile Bridge in the afternoon.

Here they not only drove the Irish out of their works but they also chased them for two miles. Thirty of the foe were killed, and five were captured, but the rest, owing to the rough and woody nature of the country, got away. Penn and McAdam returned to the town for the night, and in the morning they fired the houses and carried away 250 barrels of oatmeal. With 350 musketeers they marched to Smithtown and burned the stores there, and then returned to Bonratty 'with what lumber we had gotten'. McGragh and his lieutenant had died of their wounds and they were given honourable burial with three volleys of small shot.[1]

Penn now got to work upon the defences. Walls were pulled down to afford a field of fire, thatch was removed from the houses, and a platform made in the pigeon house for a great gun, while a breastwork was raised 'thwart the causeway at the corner of the garden wall'. Low Island, at the mouth of the river Fergus, some 7 miles down the Shannon, was selected as a base to keep the cattle gathered from the country round. To Penn's dismay and disgust, on 16 April, the Irish raided the place and carried away or killed all the sheep there. A party had come from Croneruaghan Island, 'half a musket-shot from the main, where the rebels have a strong ward in a very good Castle'. A hoy and a pinnace were sent to ride between the two islands.[2]

To make up for this misfortune a raiding party was sent out next day. It crossed the Orgarney to the east and, after sending back 200 cows and 280 sheep, ended up by summoning Ballinclay Castle. As it was too strong to attack without artillery support the raiding party, well-content, returned home.[3]

These operations seriously alarmed the Confederacy at Kilkenny, Complaints were reaching them of 'the inroads which the garrison of Bonratty daily made into the country'. In their view, 'Bonratty under McAdam, a stout officer, who immediately began to raise works to strengthen the Castle, that, by reason of the marshes by which it was environed, might in a short time be upon the matter impregnably fortified'.[4] The strength of the garrison, 800 foot and threescore horse, also caused them alarm. The place must be attacked. They gathered 3000 foot and horse from Leinster and placed them under the Earl of Muskery, with Lieut.-Colonel Purcell,

1 Penn, *op. cit.* p. 167.
2 *Ibid.* p. 176.
3 *Ibid.* p. 176.
4 Gilbert, *op. cit.* p. 14.

Major-General Stephenson, and Colonel Purcell, who commanded the horse, to aid him.[1] The Papal Nuncio undertook to provide the necessary money.

The safety of Low Island still worried Penn. On the 18th he consulted with McAdam about a plan he had in mind for cutting off part of the enemy at Rineana Point on the Mainland. He proposed to land troops at the Point to draw the Irish down there, and to hold them until McAdam, moving overland from Bonratty to take them in the rear, should signal his approach. Penn was then to retreat while McAdam advanced, so that the Irish would be hemmed in without any possibility of escape. Early on the 21st Penn, whose ship was riding in Beth Road, a little above the junction of the Shannon and Fergus rivers, landed three boats of well-armed seamen and four files of musketeers at 4 a.m. A party was sent out to discover the whereabouts of the enemy while the rest prepared selected spots to hold against the foe. Unfortunately a tremendous storm of wind and rain came on. The Irish not unnaturally preferred to remain in the shelter of their quarters, and the slow hours passed with no sign of McAdam. Hoping against hope Penn stood his ground for three hours past the appointed time. Already his luckless troops were soaked to the skin so, yielding to the inevitable, Penn burned some houses and boated his men, only for them to be soaked once more by the waves before they could get aboard. A party had been sent out by McAdam but, after killing 30 Irish and capturing 60 cows and 100 sheep, the severity of the weather drove them back to Bonratty.[2]

On 1 May Penn learned of preparations being made at Limerick to fire the ships near Bonratty, and Browne of the *Trial* was ordered to take all possible care to prevent this.[3] On the 6th news came that Cappah Castle, which lay about two miles north of Bonratty had been summoned by the Irish.[4] Castles and fortified houses had a fatal attraction for both sides in the civil war and garrisons were uselessly locked up in them. Garrisons had therefore been placed in Cappah and in Rossmonnahane, a mile south of Cappah. Both garrisons stood little chance of holding out as they could receive little or no help from Bonratty. They would have been far more useful in defending Bonratty itself.

As the news indicated that the Irish were approaching in full force a council-of-war was called on board the *Discovery*[5] for the next day. Orders were sent to the captains riding near Bonratty to send half their men ashore to Quay Island to build a fort in the north-west waterside to defend the ships lying off there. The men were to go aboard each night, and signals were arranged. If the enemy should attack the fleet in the daytime a flag was to

1 *Ibid.* p. 21. 2 Penn, *op. cit.* pp. 171–3. 3 *Ibid.* p. 175.
4 *Ibid.* p. 176. 5 She joined Penn on 30 April, commanded by Grigge.

be hoisted in the main-topmast shrouds of the *Trial*; if at night a gun was to be fired. If the land forces were attacked, or were in distress, by day or night, the great gun on the platform in the garden was to be fired.[1]

On 9 May Lord Thomond embarked in Grigge's ship, which had just arrived to go to Cork en route for England, where he had decided to live. And on the 13th Penn sailed from Beth Road for Bonratty. After inspecting the fort building on Quay Island he went ashore to consult with McAdam on the state of affairs. During their conversation heavy firing was heard from the north, which indicated an attack on Cappah Castle. Muskery had brought up his great guns to bombard the Castle. After 26 shots a breach was made, through which the Castle was stormed. The two files of musketeers, under Sergeant Morgan, a Welshman, who comprised the garrison, were compelled to surrender after a desperate defence, quarter being given them. Muskery at once pressed home his advantage. He marched straight upon Rossmonahane. Sergeant Morgan was sent in to arrange the surrender. 'What he did, being compelled, or how the matter was ordered, is not yet known; the Castle was delivered up without so much as a shot made.' Penn summed up his disgust thus: 'we believe the soldiers were hanged, as justly they deserve'.[2]

Penn had hold of the situation at once; he hastened on the building of the fort and obtained a promise from McAdam to continue in it the garrison of two files of musketeers. After impressing the need to complete the fort on Captains Brown and Dacre of the *Trial* and *Peter*, who were riding off Bonratty, Penn rejoined his ships in Beth Road. He came up again on the 28th with bread for the *Peter* and the *Green* frigate. These were small vessels of 80 and 30 tons, which drew little water. At 10 a.m. some Irish horse appeared up the hill and tried to draw out the garrison, 'having made an ambush of musketeers behind hedges'. McAdam had been expecting this attack in the previous evening but as it had not taken place he had gone to bed to get a little rest. He was speedily on the scene and sent out four files of musketeers, who were attacked 'by the rogues in the ambush'. The musketeers outflanked them and drove them from the hedges. Five or six companies of foot, with two troops of horse, then came down the hill and drove the musketeers back in their turn. McAdam sent out his horse, who took full advantage of the flat open space between the ridge and the hill to drive the Irish into their works. Muskery now opened fire into McAdam's works from a falcon and a demi-culverin, and McAdam replied and dismounted one of the guns. Desperate attempts were made to capture it but these were driven back. As it was low water Penn ordered the fort on Quay

1 *Ibid.* p. 176.

2 *Ibid.* p. 179.

Island to be fully manned 'lest they should attempt anything (as was most likely at this time) against it'. McAdam wished to send two of the smaller ships to sea to secure provisions, but Penn objected on the ground that as the rebels 'only aim is at the Island, they could not be possibly spared from thence', and also because he did not feel sure that they would return 'having already had their hands (if not their hearts) full of this business'.[1] In view of this heavy attack it was decided to send two of the 'less useful vessels' for assistance; Smith in the *Anne and Percy* to Sligo to hasten Sir Charles Coote's march to Bonratty's relief, while Liston in the *Roebuck* was to go to Cork to ask for Broghill's aid. They were replaced by Winnal in the *Blessing* who had brought supplies and ammunition.[2]

By this time the Irish had established their camp behind the hill to the north. They had mastered much of the ground outside the ridge and ditch, which supplied them with an abundance of wood, which they needed for fascines and faggots. These were necessary to make their approaches, as the hill was too steep and stony for trenches to be dug and so fascines had to be used instead. On 22 May they had brought these within carbine shot of the defences, and were busily filling them with earth.[3] Penn and his boy were watching this proceeding from the outward work, when two shots were fired at them without effect. McAdam rode out to gain a view of the Irish strength, 'having lain so still as they have done'. He opened fire and a hot skirmish continued for two hours. The Irish brought down their cannon and heavy fire ensued. Towards the end of the fight McAdam determined to try and beat the foe out of their works and to take their guns. He asked for the assistance of Penn's seamen as 'being more skillful in drawing them away, or to unspike and break them'. Penn consented and on the 24th the sally was made, and the seamen and soldiers drove the foe out of their works with some loss, only to find the Irish had withdrawn their guns up the hill again. The raiding party were then driven back into their lines by a charge of the Irish horse.[4]

On the 29th McAdam sent for Penn. He was anxious, as provisions were beginning to run short, to send away the women and children. Penn agreed as he thought this should have been done long before. The refugees should be sent to Cork or Kinsale in the *Roebuck* and *Anne and Percy*. In the afternoon parties of horse and foot sallied out and for two hours skirmished with strong forces of the enemy. The great guns on both sides engaged heavily, and the Irish brought into action a new demi-culverin. All next day the fighting continued, and so heavy was the pressure that it was impossible to embark the refugees in the *Roebuck*. The *Anne and Percy* was so short of

1 *Ibid.* p. 181.
2 *Ibid.* p. 181.
3 Gilbert, *op. cit.* p. 11.
4 Penn, *op. cit.* pp. 184–5.

provisions that the captain refused to carry extra passengers, and only next day were the unfortunate refugees able to get aboard.[1]

On 4 June the acute question of supplies was discussed. As some of the cattle had been captured it was decided to move them to Fennis Island, in the mouth of the Fergus instead of to Low Island, the original base. They were taken in the hoy.

The Irish resumed the attack and a vigorous cannonade was exchanged. Several shots were scored on the little castle without doing any harm.[2] But two guns, which had been sent from Limerick, had been placed in such a position as to shoot directly down the river which, as Penn noted with some concern, 'will much annoy us in our making to the Castle'. As a result Penn warned McAdam that he must apply for such ammunition as he needed in good time 'before the rebels blocked up the water passage to Bonratty, as was most probable they would'. Brown, of the *Trial*, now asked that his ship 'might ride against the pass, to intercept the rebels in their intended going over'.[3] This point was at the corcasse, probably near the dam, and would guard the passage to Quay Island and also up the river.

Bellings says it lay half an English mile below the Castle.[4] This spot was the key to Bonratty, though it was difficult to take and hold until the little castle had been captured. Quite early Penn had realized this but it was some considerable time before the Irish grasped the fact.

The besiegers strove to press forward their lines to the level ground outside the ditch, but the Parliamentary horse made such effective use of this cavalry terrain that the foe could make no progress. Constant sorties were made by the garrison but little harm was done, even though on several occasions the lower lines of fascines on the hill had been pulled up. These sallies were finally checked by a gun placed in the lower part of the Irish works. Yet the main object of the Irish attack, the carrying of the Castle and the mastering of the main works, had hardly been begun. Lord Muskery, 'seeing the party with him ready to fall into great distress, called on the officers and let them know, that unless some attempt were made to distract the besieged from being wholly intent upon that quarter, where they made their approaches, necessity would force them to rise with dishonour, the clamours of the soldiers being already very great, and the end they aimed at being in all appearance so far remote'.

Muskery's problems were connected with supply and pay, and he realized a prolonged siege was therefore out of the question, for it would be impossible to hold together an undisciplined force for any length of time. He had to force a decision without delay.[5]

1 *Ibid.* p. 187. 2 *Ibid.* p. 187. 3 *Ibid.* p. 190.
4 Gilbert, *op. cit.* p. 23. 5 *Ibid.* p. 22.

He decided to create a diversion from his main attack by an assault on the corcasse. This was held by a guard upon the pool on the west side. The dam was selected for the point of attack; 'the place, if gained, would have easily been fortified, and a passage made there, by which part of the army might be transmitted to invest the Castle, on that side which stood free, and whence they received constant relief from the Parliament ships riding in the Shannon'. The attack was made. So unexpected was it that the guard took to their heels and ran, and for four hours the Irish held the place. Then they also were seized with panic. 'They saw some lighted matches move from the Castle towards them, and imagining they heard the noise of horses, they fled, carrying some small booty over the dam, which afforded passage to one man abreast'. Bellings says the sergeant in charge led the flight, of which slack discipline was the cause. Muskery determined this must be stamped out, and next day he handed over ten of the culprits to the provost-marshal for execution, in spite of vigorous protests, even from the officers.[1]

Penn appears to date this incident about 9 June, when he records, 'our men digging a trench to secure the aforesaid corcasse, were set upon by the rebels, intending to beat them from their works; but with the loss of 15 men, shamefully retreated'. Penn had realized early that the corcasse was the key to Bonratty. He instantly brought Farmer in the *Green* frigate to anchor off the threatened spot. Four guns, rejoicing in the quaint name of *murderers* were sent ashore to Quay Island from his ship and the *Increase* 'to clear the flankers'.[2] His partial success seems to have revealed to Muskery the real key to the position, for he now concentrated upon the little castle, the capture of which would enable him to move into the corcasse.

By 12 June the Irish had drawn their lines so close that the problem of feeding the cavalry horses became pressing. It was decided to keep them on Quay Island whence they could be ferried to any threatened spot. Several ships now arrived; the *Charles*, *Sampson*, *Roebuck* and *Truelove*. The last two brought 100 soldiers, 'good proper men to look upon', Penn records though he went on to sound a more ominous note, 'God grant they prove truer to their cause and colours than the Welsh have done'.[3] They were sent on to Bonratty. Suddenly in the distance Penn caught the sound of a great volley of small shot. Then three beacons flared up, one at Cappah Castle, another at Hunt's Castle, and the third on the top of the hill above Limerick. At 10 p.m. that night the barge which had taken the soldiers up to Bonratty returned with a letter from McAdam; he reported that the whole Irish army, horse and foot, in battle order, were standing to arms. 'What this means', wrote Penn, 'he nor we yet knowing, he desireth me to come to-

1 *Ibid.* pp. 22–3.
2 Penn, *op. cit.* p. 192.
3 *Ibid.* p. 194.

morrow and bring Captain Coachman with me: to which I returned answer, I would (God willing) be with him.'[1]

Next day, the 18th, they went up to Bonratty, posting the *Charles* to anchor by the *Green* frigate 'for the better stopping of the passage'. McAdam told Penn his troops would make a sally next morning and at 2 a.m. heavy firing showed that the sally was in progress. The Irish works were entered, the foe driven out, and the fascines and baskets spoiled. At 9 a.m. Penn received a note from Swymmer to say the *Roebuck* was so dangerously leaky that she could not go to sea. Her guns were to be transferred and she was sent down the Shannon to Eniscattery to be hauled ashore and examined. It was decided to send the *Green* frigate to Sligo to ask for help, and Winnal in the *Blessing* was sent up to Bonratty in her place. As there was now only 16 days' drink left in the ships, Penn sent the empty beer casks to Kinsale by the *Roebuck* and *Increase* on 26 June.[2] He had now eight vessels with him, the *Peter*, *Blessing*, *Charles*, *Truelove*, *Trial*, *Sampson*, *Antelope* and *Green* frigate, whose orders for Sligo had been cancelled. At McAdam's request Penn moved up from Beth Road to an anchorage in the Shannon a little to the west of Quay Island.[3] Next day Coachman of the *Truelove* who had been ashore, brought back the news that a general assault was expected. After sermon at the fort on Quay Island Penn called a council-of-war and it was decided to send ashore 64 men out of the ships, with some guns, four grandoes and a fiz-gig out of the *Charles*, and four grandoes out of the *Trial*.

Yet unknown to Penn or McAdam, Muskery's position had become increasingly difficult. Money was short, notwithstanding £600 brought by the Papal Nuncio, and how to pay the soldiers was more than Muskery knew. With lack of pay was the danger the men might disperse to their homes. The siege must be brought to a close as soon as possible; a prolonged investment was ruled out, in Muskery's opinion, for another reason; the garrison was 'abundantly provided with all things', and could be continually supplied from the ships riding in the Shannon. Little did Muskery know the real truth; that Bonratty was desperately short of food and munitions.

The little castle must be taken since it 'much annoyed the Irish in their trenches and retarded their approaches'. Muskery therefore brought up his Limerick guns to batter the building.[4] This closing in of the Irish forced Penn to consider how he could defend the fort on Quay Island more adequately. On the 29th he took out of his ships anchored above the Island, all the men they could spare in order to build a line and work there, to guard

1 *Ibid.* p. 195.
2 *Ibid.* p. 196.
3 *Ibid.* p. 198.
4 Gilbert, *op. cit.* p. 23.

against a possible attack by the enemy's horse and foot at low tide across the sand and rocky ground that lay between the island and the corcasse. Should the island fall it would be impossible to send help by water to Bonratty. All through next day in 'extreme foul weather, with much rain and dirt' all hands laboured at the line under Penn's personal direction, until it began to take shape.[1] At the same time the Irish were battering at the little castle with their guns, but the walls were so thin that the shot actually passed through them without shattering the fabric, and so 'undauntedly did those entrusted with the guard of it maintain it, that still as the cannon enlarged the breach, they at every shot poured forth a volley by the hole the bullets had made'.[2]

Next day, 1 July, McAdam asked Penn to come for a consultation as he hourly expected another assault. Penn found him engaged at a council-of-war, 'in which I desired not to interpose, as not willing to engage myself in the shore-matters, otherwise than I might with freedom perform my duty in my proper sphere'. When the council was ended he joined them at dinner. As they sat eating, the cannonade grew to such a pitch that McAdam rose from his seat and went to the little castle to see what damage had been done and to encourage his men by his presence. At this very moment the gunner of a field piece on the hillside took aim at an upper window of the Castle to try his skill, though without the least idea of doing any damage as the distance was too great. His random shot, however, decided the issue at Bonratty. As it passed through the window it killed McAdam. From this disaster the defence never recovered, for there was no one capable of taking McAdam's place, either for courage or as an inspiring leader of men. Major Hooper, who took over the command, Penn described as 'pusillanimous'. Trouble broke out almost at once; Penn heard some of the soldiers grumbling about some money that McAdam had found in the Castle, demanding part of it for their pay. To satisfy them Penn had a guard placed over the room in which it was stored. The officers, too, began to quarrel, and Penn had to order them to their posts. His chief anxiety was that some deserter, especially from among the Welsh, might carry the news of McAdam's death to the Irish.[3]

The rot spread, for early next morning Penn found some of the officers in McAdam's room, with 18 bags of money and some plate in front of them, which they were about to divide. He begged them to leave enough to provide for the future and for the soldiers. 'But', he commented, 'what power my poor rhetoric to this purpose had, you may easily guess if ever you saw or heard it preached on a poor miser.' He could make no impression

1 Penn, *op. cit.* p. 200.
2 Gilbert, *op. cit.* p. 20.
3 Penn, *op. cit.* p. 201.

on them. Morale had begun to go to pieces. Hooper now sent a message asking Penn to send off a ship to ask Broghill for speedy help. The *Charles* was ordered to sail for Kinsale next day, and Penn who had returned to his ship, sent up a boat with provisions for his men at Bonratty. It returned with the news that a Welsh deserter had betrayed the news of McAdam's death, and that the Irish were calling out to the defenders to 'get a better commander'.[1]

Penn and Coachman both went up to consult with Hooper about relieving the seamen there. As an attack was expected it was necessary to have either the old or new men on duty. As there were no provisions Penn promised to send some up. On the 5th men were selected from the *Truelove* and *Sampson* to relieve the seamen at Bonratty. This was done with difficulty, 'which cannot be avoided when men are enforced to land service'. They were sent up that night. The relieved men were embarked in the *Truelove*, the barge and the hoy, and sent down the Shannon, at discreet intervals so as not to arouse suspicion, to gather what provisions they could for the garrison.[2] Fierce fighting continued ashore; the Irish burst their way into the little castle but an instant counter-attack drove them out again. But they were now within pistol shot of the works. On the 8th the *Truelove* returned with 80 cattle and 30 sheep, and part of these were taken up in the hoy, as 'the enemy being set down so close that they (the garrison) must now look to be plied hard'. Next day the hoy took up 20 more cattle, and Penn consulted with Coachman and Line about getting away the wounded soldiers, women and children to safety.

The Irish had opened a heavy fire on a house within the little castle and battered down part of it. But the most alarming news, to Penn's mind, was that 'the enemy got down a gun this day into the corcasse, which flanks all our works, and will thereby do us very great damage'. Muskery had seen his opportunity to force a decision by a swift blow. Now was the critical moment; for he knew of the loss of morale caused by McAdam's death. He had faggots prepared so as to fill in and cross the ditch, and he brought two small field pieces down to the seashore 'near the dam, to beat off the ship that rid at anchor there, with the intent to play on the back of those that should again attempt to recover that post'. All was set for the final attack. For Muskery it was either victory or retreat.

On the following day, the 10th, Penn, Coachman and Line went up to Bonratty. To their surprise, dismay and alarm there was no sign of the *Green* frigate or of the *Antelope* at their accustomed post off the corcasse. Penn summed up his feelings: 'I doubted all was not well'. He soon

1 *Ibid.* p. 202.

2 *Ibid.* p. 203.

learned the reason; 'coming up to the ships, I understood the enemy had gotten the corcasse, which we had so much laboured to maintain; for, having beaten off the two ships, one being shot through the hull, the other through the sail, and not being able to make good their riding, or damnify the enemy they were forced to quit the place and anchor higher among the rest of the ships'.[1]

With the first light of dawn the field pieces had opened fire and forced the two ships to slip their cables. At the same time the Irish attacked from the hill. They hurled their faggots into the ditch, crossed it, and stormed their way into the little castle through the breaches in the walls. In an irresistible wave they pressed forward to take some of the inner works, 'so sunk in the earth' that the dreaded English horse could not charge them. On they pushed to attack the half moon made at the east point of the garden, only to be repulsed with some loss. Other troops had poured into the corcasse, now undefended by the ships, and secured possession of it. The way to Bonratty Castle itself was open.[2]

Muskery, a good soldier, pressed home his successful attack. At dawn next day he launched another fierce assault, and his troops forced their way in between the in and out guards. The morale of the defence, already at a low ebb, simply crumpled. Filled with panic the English troops still holding out in the corcasse fled from it across the sand and rocky ground 'unworthily', as Penn noted, 'and made a confused retreat to the Island, where I found many of them at my landing'.[3] He took command of the situation instantly, and had the fugitives ferried over the Orgarney to the 'eastward-most' corcasse, in order to keep open a possible line of retreat for the troops now cut off in Bonratty. He sent a message to Hooper to gather together his scattered troops and to try to inspire them personally so they might do their best to hold this last position. He promised him support from the water, 'and willed him to make demand of such things as he wanted, and were within our power to supply him with', though he went on gloomily as though he were giving utterance to his thoughts, 'lest he should be put to that strait (and that not unlikely, more's the pity) that neither he could command, nor we relieve.' Hooper's reply was not encouraging; he reported he had no hope of holding out for more than three days as his ammunition would then be exhausted. Penn promised him all the munitions he had aboard the ships; but Hooper had no power of inspiration or of leadership in a tight corner, and he replied 'as if they had already determined to yield to the enemy'. He declared his men were tired with prolonged service, discouraged by the loss of the corcasse, and so outnumbered

1 *Ibid.* p. 205. 2 Gilbert, *op. cit.* p. 23. 3 Penn, *op. cit.* p. 205.

that they would no longer stand to their arms. He asked for boats to bring off what guns they could, 'together with my Lord of Thomond's lumber (as he termed it), which was in the Castle'. He announced they had resolved to quit the Castle by swimming over their horse and escaping to the eastwardmost corcasse. There they would stand 'till they could possibly get on board our ships', Penn was disgusted; 'all which was as far from my affection, as it was impossible for them to bring to perfection'.[1]

As there was nothing to be done Penn promised the assistance of his boats, 'if by money, or fair words, or both, I could persuade our seamen to engage themselves, whose hearts (by the evil example of the soldier, and the pusillanimity of the commander) were now quite fallen'. The complete loss of morale, which had spread even to the seamen, could only lead to one result. It was not long in coming; two hours later the eastwardmost corcasse fell. All assistance to the men in Bonratty Castle, either by sea or land, was now impossible. Penn at once shipped all the women and children from Quay Island, and had some breastworks built to secure the Island against the possibility of an attack by the enemy horse at low water. Two hot skirmishes took place ashore, and then all was quiet, but what had happened was unknown.

All through the night there was a strange silence, a dramatic contrast to the last few days; no gun or musket was heard on either side. In the morning two officers, bringing with them an Irish captain, boarded the *Peter*. Penn was told the Castle must surrender as there were only 300 effective soldiers left. They asked Penn for his advice as to the conditions they should make, and he enquired what the terms were. They told him quarter, with the right of marching out with full honours of war by land to Cork, while the wounded would be shipped to Cork or Kinsale. Though Penn still hoped vainly for help from Broghill he saw that their minds were made up, and soon they departed for Bonratty. While the terms of surrender were still being discussed the Irish, about 6 p.m. suddenly opened fire upon the ships. One was shot through and through, her mainmast spoiled, and a sailor killed. 'They plied us so hard, with two guns at a time, for seven shot together, that we were forced to let slip; and the tide (as it pleased God) serving well, we got higher up into the river.' Even so they were within musket shot of the shore, and Penn called his captains together to consult what to do. It was decided to go down the river out of range of the enemy's guns, to demolish the fort and works on the Island, after embarking the guns. This was done, though six horses had to be killed. A favourable tide brought the ships away and on 12 July they anchored in Beth Road, where Penn found the *Fellowship*. He boarded her, 'and, (being wet and weary)

1 *Ibid.* p. 206.

took myself to rest'. But not for long, as his 40 seamen still at Bonratty troubled him. He called his captains together and it was decided that the Irish captain, Fitz-Gerald, should write to Muskery on their behalf. The letter was sent by two women prisoners who were set ashore. Penn arranged that a fire should be lighted at this spot when the answer came. He waited eagerly, and at last a fire blazed up near the appointed place. At once he sent off his boats, with a flag of truce in the leading one. To his disgust and astonishment fire was opened upon them from the shore and they were forced to sheer off. A camp fire had been mistaken for the signal![1]

Next day a boat came down bringing the Articles of surrender, signed by Muskery and the garrison's officers. Penn stigmatized them 'as so mean, and so far beneath the honour of a soldier, that I should never have consented thereunto'. However, he went on 'things past cure ought to be past care', and he accepted them, and sent up his boats to bring away his seamen and the soldiers. At 9 p.m. they returned crammed full of sailors and troops, of women and children. On the 16th the little fleet arrived at Eniscattery Road, where the refugees were landed in order that the sick and wounded could be placed in one ship, separate from the healthy.[2]

Thus ended the expedition to Bonratty. Once again it had been made clear that unless a squadron could prevent a place from being encircled by land, it could not prevent its capture by a determined foe, unless relief came by land as well. Yet the expedition came near to success. Had not a chance shot killed McAdam, a resolute and inspiring commander, the result might have been different. For it was strange how ignorant each side was of the difficulties of the other. Penn and McAdam had no idea that Muskery's army was on the point of breaking up for want of pay, while Muskery was under the impression that the garrison were well supplied, whereas they were desperately short of provisions.

Penn had done his best and rightly he confined his command to his squadron. Muskery, though luck aided him, was a capable and skilful leader; he had solved his difficulties by pressing on with his attack, once he had realized that the key to Bonratty lay in the capture of the west corcasse. When the morale of his foe broke he allowed them no rest but, by an overwhelming attack, he crushed and broke their spirit. Yet it speaks much for the organization of the Navy that it was able to send a squadron to the Shannon, for such was its grip upon the sea that the Royalists were powerless to prevent such a movement.

Bad weather stopped Penn from reaching Kinsale until 26 July. There it was decided that Moulton in the *Lion* and Crowther in the *Entrance* should act as convoys for ships between Ireland and England, and that the *Truelove*

1 *Ibid.* pp. 207–8. 2 *Ibid.* p. 210.

Blessing and *Charles* should ply between the Shannon and Galway, while the *Sampson*, *Peter* and *Discovery* were to ply between the Old Head of Kinsale and Land's End. The *Green* frigate was to go to Youghal, and the *Trial* and *Antelope* to Milford, and Penn in the *Fellowship* to overhaul in England.

The strain through which Penn had gone now declared itself. On 6 August he wrote, 'not being well through melancholicallness (surely a word worth recording) of the place where I had been long mewed up, together with the sad success of our forces there, I was constrained to enter into a course of physic; and so was exempt from other duties.' On 12 August he sailed for England.[1]

More than a naval squadron was needed to deal with the Royalist forces in Ireland, even to establish a possible base. Penn's expedition had demonstrated this fact. An army, properly supplied and well led, was necessary. Yet the lesson learned at Bonratty, was to be put into good effect in the near future, for a force, commanded by Cromwell, and supported by a fleet under Blake, Popham and Deane was to illustrate the value of amphibious warfare, properly co-ordinated. Only thus could the nests of privateers in Ireland be smoked out and ended.

1 *Ibid.* p. 216.

THE BINNACLE

By Commander W. E. May

ALL matters concerning the history of the compass are obscure and, inevitably, information as to early binnacles is extremely sparse. While most writers on navigation take the compass for granted and scarcely mention it, only one or two refer to the binnacle at all. The information in nautical dictionaries is also very scanty and, as will be seen, these tend to repeat one another.

The word *binnacle* appeared at the very beginning of the seventeenth century, and for about 150 years was used concurrently with the earlier form *bittacle*, which it finally replaced. It is usually stated that *bittacle* is derived from the Portuguese *bitacola*, but this I believe to be an error, which probably originated in the 1888 edition of the *Oxford English Dictionary*.[1] The theory would appear to be more tenable if the word *bittacle* had first appeared in the English language during the sixteenth century, when England admittedly learned much of navigational lore from the Iberian nations, but the word was in use in this country at least a century earlier. Our contacts with France were at that time close, and it is much more likely that we adopted and corrupted their *habitacle*, and that this was derived from the Latin *habitaculum*, a small dwelling. This theory was advanced at least as early as 1835,[2] and the suggestion made by Webster in 1832 that *bittacle* is derived from the French *boîte d'aiguille* seems too far-fetched to be considered.[3] (In the 1907 edition, this dictionary says that the word is derived from the Portuguese.)

The *Imperial Dictionary*[4] states the binnacle was originally 'a little house near the mizzenmast for pilot and steersman, and this from L. *habitaculum*, an abode, from *habito* to dwell'. Walter Skeat[5] says that 'The habitaculum seems to have been originally a sheltered place for the helmsman', and Captain John M. L. Gorett[6] that 'the astrologer was called down from aloft and installed in a small cabin erected on deck to house the Marinette

1 Vol. 1 (1888), p. 869, art. Binnacle.

2 *Penny Cyclopaedia* (1835), Vol. IV, p. 410, art. Binnacle.

3 Noah Webster, *International Dictionary* (1st ed. 1828); 1907 ed., Vol. I, p. 146, art. Binnacle.

4 John Ogilvie, *Imperial Dictionary* (1st ed. 1847); 1904 ed., Vol. I, p. 272, art. Binnacle.

5 Walter W. Skeat, *Etymological Dictionary of the English Language* (4th ed. 1910), p. 60, art. Binnacle.

6 John M. L. Gorett, 'The Mariner's Compass', *Journal of the American Society of Naval Engineers*, Vol. XLVII (1935), p. 223.

and called the "Habitatus" which in time became the Bittacle'. The last-quoted article abounds in misconceptions, and is only mentioned here as it contains a possible suggestion as to the origin of the bittacle. Perhaps the early navigator was afraid to use his compasses openly lest he be called upon to face a charge of witchcraft. What was more likely than that he should instal himself in some little structure where he could practise his mysteries in safety and that, when it emerged into full view, the compass brought with it the name of the structure in which it had been hidden and bestowed it upon its new stowage? At the same time that this view is put forward, it must be emphasized that no early explanation of the origin of the word has come to light.

Binnacle and *bittacle* have been spelt in a variety of ways. The following are those spellings which I have been able to trace, with the earliest and latest known dates of their use:

Betakle	1410	Bittakle	1644–58
Bitakyll	Fifteenth century	Biddikil	1684
Bitakle	1485	Beetackle	1696
Bitackle	1597	Bittake	1701
Betacle	1608	Binacle	1701–1818
Bittacle	1608–1845	Binnacle	1733 to present day
Bitacke	1609	Binocle	1738
Bitakell	1620	Bitacle	1784–1805
Bitickell	1621	Betical	1805
Biticle	1621	Bitticle	1846

The first of these appears in an inventory of stores in the Tower,[1] and Alan Moore[2] suggests that the word may not apply to a binnacle in the modern sense but mean something quite different. The word with one letter changed also appears in ship inventories of seventy-five years later.[3] In none of these lists does it appear next to anything which suggests a compass, but this is rather negative evidence with regard to any connexion between the items.

The six forms listed between 1608 and 1621 are all from Purchas, and may be his own waywardness of spelling or copied from the original sources which he used. In dating them I have assumed the latter. All the same, even in later works different spellings often appear on the same page.

1 Public Record Office, *Exchequer Accounts*, bundle 44, no. 17.

2 Alan Moore, 'Accounts and Inventories of John Starlyng, Clerk of the King's Ships to Henry IV', *Mariner's Mirror*, Vol. iv (1914), p. 168.

3 Public Record Office, *Chapter House Book*, Vol. vii; M. Oppenheim, *Naval Accounts and Inventories of the Reign of Henry VII, 1485 and 1495–7*, Naval Records Society (1896), pp. 51, 56, 65.

An example of this diversity in use is contained in a report to the Admiralty in 1818 by Rear-Admiral Sir Benjamin Hallowell, Commander-in-Chief of the Cork station,[1] in which the Admiral and most of his captains use the spelling *binnacle*, while Captain W. R. Broughton of the *Spencer* spells it *binacle* and Captain S. Warren of the *Bulwark*, *bittacle*.

Jal[2] lists eight other words which are obviously derived from the same Latin source. They are:

Abitacola	Italian	Bitacora	Spanish and Basque
Arbitrak	Medieval Breton	Bitacula	Medieval Spanish
Benicle	Lascar	Bittaga	Basque
Bitacola	Portuguese and Genoese	Habitacle	French

Another group of words used in Italy and southern France are given by him as:

Camerino	Venetian	Gisole	Provençal
Chiesola	Venetian	Guisolle	Provençal
Custode	Provençal	Gexoea	Genoese
Gésole	Provençal		

Saverien tells us that *gésole* and not *habitacle* is the correct name for the structure housing the steering compass.[3]

The Baltic nations use variations of the German *Nacht-haus* or its modern form *Kompas-haus*.

The earliest mentions of the binnacle give no indication of its form. For any description we must wait until the seventeenth century. We then have the following:

By Captain John Smith in 1627:[4]

a square box nailed together with wooden pinnes, called a Bittacle,. . . ; this is built so close, that the Lampe or Candle only sheweth light to the stearage, and in it alwaies stands the Compasse;. . . . Upon the Bittacle is also the Trauas. . . .

By Father Fournier in 1643:[5]

L'Habitacle, appellé des Marseillois la Custode, ou Gesole, où sont trois niches, ou Armoires, & parfois quatre, en l'vne est la Lumière, en l'autre est la Boussole, Compas ou Quadran de mer, en la troisiesme, l'Orloge ou Poudrier. S'il y en a quatre, on y met deux Compas.

The binnacle, called in Marseilles the *Custode* or *Gesole*, where there are three recesses, or cupboards, sometimes four, in one is the light, in another is the compass, in the third the sand glass. If there is a fourth, two compasses are put in it.

1 Public Record Office, *Letters from Admirals*, Adm. 1/630, no. 214*a*.

2 A. Jal, *Glossaire Nautique* (1848), p. 814, art. Habitacle.

3 Saverien, *Dictionnaire Historique, Théorique et Pratique de Marine* (1st ed. 1758), Vol. II, p. 50, art. Habitacle.

4 Captain John Smith, *The Seamans Grammar* (1st ed. 1627), p. 11–12.

5 Father Georges Fournier, *Hydrographie*, bk. I, ch. xiii (1st ed. 1643), p. 30; (2nd ed. 1667), pp. 24–5.

By Sir Henry Mainwaring in 1644:[1]

A Bittakle. Is a close Cubbard placed in the Steeridge before the Whip, or Tiller, whereon the Compasse doth stand....These are to be so contrived, that they may carry candles or lamps in them, to give light to the Compasse so as it may disperse no light, and yet to let any be seene about the Ship.

By Guillet:[2]

Habitacle est un Réduit, en façon d'Armoire, devant le poste du Timonnier, vers le Mat d'Artimon...on y enferme aussi la lumière & l'Horloge.

The binnacle is a stowage in the form of a cupboard before the helmsman's position near the mizen mast....The light and the sand glass are also kept in it.

By Boteler in 1685:[3]

the Bittacle...is that Frame of Timber that standeth in the Steerage directly before him that Steereth, and it is the destinated Place for the receipt of the Compass, by which the ship is steered in her Course.

By Ozanam in 1691:[4]

L'Habitacle ou Gesole, est un Reduit en façon d'Armoire, placé devant le Poste du Timonier vers le Mât d'Artimon...la Bousole qu'on y ferme, avec la lumière & l'Horloge.

The binnacle is a stowage in the form of a cupboard, placed before the helmsman's position near the mizen mast...the compass which one encloses in it with the light and sand glass.

By Aubin in 1702:[5]

Habitacle. *Nagt-huis, 't Huisje, Kompas-huis.* C'est une espéce d'armoire à un ou à deux étages, devant le poste du Timonnier, vers le mât d'artimon....

On y enferme aussi l'horloge & la lumiere qui sert à éclairer le Timonier....

'L'Habitacle qui est devant le Timonier, est une espéce d'armoire, qui dans les petits vaisseaux, est separée en trois espaces, ou apartements, & en cinq dans les grands. On met les horloges dans les deux qui sont le plus en-dehors, & les compas dans les deux qui sont le plus en-dedans. Celui du milieu sert à placer la lampe qui éclaire toute l'armoire....

Les trois retranchements des habitacles des petits bâtimens servent à mettre le compas, la lampe & l'horloge.'

This is a kind of cupboard with one or two tiers, before the station of the helmsman, near the mizen mast....

Also put in it are the sand glass and the light which is used to give light to the helmsman....

'The binnacle which is before the helmsman is a kind of cupboard, which in small ships is divided into three spaces or compartments and into five in large ships. The timepieces are put into the two above and the compasses into the two below. That in the middle serves to accommodate the lamp which illuminates the whole cupboard....

The three compartments of the binnacle in small vessels serve to set the compass, the lamp and the sand glass.'

By John Harris in 1704[6], in words very similar to those of Boteler:

Bittacle, is a Frame of Timber standing in the Steerage of a Ship, just before him that Steereth, and in it is placed the *Compass* by which the ship is kept in her Course, and finds her way.

1 Sir Henry Mainwaring, *The Seaman's Dictionary* (1644), pp. 8–9. Naval Records Society (1922), Vol. II, pp. 98–9.

2 Sieur de Guillet, *Les Arts de l'Homme d'épée* (6th ed. 1669), art. Habitacle.

3 *Boteler's Dialogues* (1685, written forty years earlier), p. 121. Naval Records Society (1929), p. 87.

4 Ozanam, *Dictionnaire Mathématique* (1691), p. 279.

5 Aubin, *Dictionnaire de Marine* (1702), p. 478, art. Habitacle (1736 and 1747 eds. p. 550).

6 John Harris, *Lexicon Technicum* (1704), Vol. I, art. Bittacle.

By Blanckley in 1750:[1]

Bittacle. Is a Sort of Locker framed with Deal to hold the Compass, a Glass and Candle, and stands on the Quarter Deck just before the Steering Wheel, by which he that Steers the Ship is enabled to keep her in her right Course.

By Bouguer in 1753:[2]

Compas de route...Ces Boussoles sont renfermées dans *l'Habitacle*, qui est une espéce d'armoire ouverte.

Steering compass....These compasses are enclosed in the binnacle which is a kind of open cupboard.

By Saverien in 1758:[3]

Habitacle. Petit logement à deux étages, en façon d'armoire, situé vers le mât d'artimon, devant la poste du timonnier, où l'on enferme la boussole, l'horloge & la lumière qui sert à éclairer le timonnier.

Binnacle. A small two-storied stowage in the form of a cupboard, situated near the mizen mast before the helmsman's position, which contains the compass, sand glass and the lamp which lights the helmsman.

By Croker in 1764:[4]

Binnacle, in naval affairs, a wooden case standing immediately before the helm on deck, and containing three divisions, with a sliding shutter to each; the middle one of which is for a lamp or candle, and the two side ones for the sea-compasses, by which the course is steered;

By William Falconer in 1769:[5]

The Binacle is furnished with three apartments, with sliding shutters; the two side ones have always a compass in each to direct the ship's way, while the middle division has a lamp or candle, with a pane of glass on either side to throw a light upon the compass in the night, whereby the man who steers may observe it in the darkest weather, as it stands immediately before the helm on the quarter-deck.

By Dulague in 1791:[6]

...l'Habitacle...est une espece d'armoire ouverte, située selon la largeur du Vaisseau, ou perpendiculairement à la longeur de la quille.

...the binnacle...is a kind of open cupboard, placed athwartships, or perpendicularly to the length of the keel.

By Steel in 1805:[7]

Binacle (Formerly bitacle) A wooden case or chest which contains the compasses and lights to shew them by night, &c. It is divided into three apartments with sliding shutters. Those at the side have a compass in each, and that in the middle is fitted to hold a lamp or candles, which emit light on the compasses through a pane of glass in each side. In small vessels it is sometimes fixed before the Companion, and the lights put in from the Captain's ladder way without going upon deck.

William Burney, in revising Falconer's *Dictionary* in 1815, repeated the latter's entry word for word.[8]

1 Thomas Riley Blanckley, *Naval Expositor* (1750), p. 9, art. Bittacle.
2 Bouguer, *Nouveau Traité de Navigation* (1753), bk. II, ch. II, p. 85.
3 Saverien, *op. cit.* Vol. II, p. 50.
4 T. H. Croker, *The Complete Dictionary of Arts and Sciences* (1764), art. Bittacle.
5 William Falconer, *Universal Dictionary of the Marine* (1st ed. 1769), art. Binacle.
6 Dulague, *Leçons de Navigation* (4th ed. 1791), p. 191.
7 David Steel, *Elements and Practice of Naval Architecture* (1805), p. 8.
8 William Burney, *New Universal Dictionary of the Marine* (1815), p. 40, art. Binnacle.

All these give a pretty clear picture of the binnacle as a simple kind of cupboard which did not materially alter its nature during the seventeenth, eighteenth and early nineteenth centuries. By the middle of the eighteenth century we at last begin to obtain pictures of what a binnacle looked like. Engravings will be found in the works of Blanckley (1750), Croker (1764), Falconer (1769) and Burney (1815).[1] A binnacle is clearly seen in Thomas Hearne's water-colour of H.M.S. *Deal Castle* about 1775[2] and one can occasionally be found in ship models.[3]

Visitors to H.M.S. *Victory* at Portsmouth will see one of these double binnacles still upon her quarter deck.[4] Its dimensions are approximately 4 ft. high, 6 ft. wide and 20 in. deep. Aubin in 1702 gave the dimensions of a binnacle in his day:[5]

Sa largeur est ordinairement d'une sixiême partie de celle du vaisseau, & sa hauteur est des cinq sixiêmes parties de sa largeur. Pour sa profondeur, on la proportione en sorte que chacun des retranchements soit à-peu-près quarré.

Its width is ordinarily one-sixth of that of the ship and its height is five-sixths of its width. For its depth it is proportioned so that each of the compartments may be nearly square.

Some of the old writers tell us that a large ship had more than one binnacle. Thus Guillet:[6]

Les grands Vaisseaux ont deux Habitacles, un pour le Pilote, l'autre pour le Timonnier.

Large ships have two binnacles, one for the pilot, the other for the helmsman.

This statement is repeated almost word for word by Ozanam (1691), Aubin (1702) and Saverien (1758).[7] Croker in 1764 said:[8]

There are always two on the quarter-deck of a ship of war, one being for the helmsman, and the other for the officer who conns or directs him.

He is followed closely by Falconer in 1769[9] with a sentence which was left practically unchanged by Burney in 1815:

There are always two binacles on the deck of a ship of war, one being designed for the man who steers, and the other for the person who superintends the steerage, whose office is called *conning* or *cunning*.

1 Blanckley, *op. cit.* p. 9; Croker, *op. cit.*; Falconer, *op. cit.* plate I, fig. 4; Burney, *op. cit.* plate II, fig. 8.

2 A water-colour of the quarter-deck of H.M.S. *Deal Castle* about 1775 is now in the National Maritime Museum. A reproduction will be found in Michael Lewis, *The Navy of Britain* (1948), facing p. 121.

3 W. E. May, 'The Binnacles of Ship Models', *Mariner's Mirror*, Vol. XXXIV (1948), pp. 83–6.

4 W. E. May, 'The *Victory*'s Binnacle', *Mariner's Mirror*, Vol. XXXIII (1947), pp. 122–3, and plate 7.

5 Aubin, *op. cit.* p. 478.

6 Guillet, *op. cit.*

7 Ozanam, *op. cit.*; Aubin, *op. cit.*; Saverien, *op. cit.*

8 Croker, *op. cit.*

9 Falconer, *op. cit.*; Burney, *op. cit.* p. 40.

A Navy Board order of 15 September 1779 directed:[1]

Whereas we think the Number of Binnacles & Brass Box Compasses allowed to His Majs Ships may be reduced. These are to direct and require you to allow in future to Ships from the 1st to the 3rd rate inclusive only two Binnacles unless demanded by Flag Officers....

Steel said:[2]

On the deck of a ship of war there are always two Binacles, one for the use of the man who steers, and the other for him who *cons* or superintends the steerage.

On a later page he gives a schedule of equipment for various classes of ships, and this shows that two binnacles each were carried in all warships from first-rates to sloops and in East and West India ships and in packets. One only was supplied to each bomb-vessel, brigantine, brig-cutter or cutter.

In 1818 William Purdo, the Master of H.M.S. *Tonnant* refers to a compass as having been fitted for trial 'in the Cunn Binnacle', and Lieutenant Henry Reneau of the same ship remarks that 'smaller vessels [than those of the line] do not generally use compasses for the Cunn'.[3]

Where exactly this second binnacle was placed 'for him who cons' is not clear. I have not been able to find it in any ship model or picture. Saverien, in a section of a ship,[4] shows the helmsman's binnacle only, situated on the middle deck abaft the mizen mast, but though he refers to the second binnacle in the text it does not appear on his sketch.

Admiral Smyth wrote in 1867:[5]

'...there are usually three binnacles on the deck of a ship-of-war, two near the helm being designed for the man who steers, weather and lee, and the other amidships, 10 or 12 feet before these, where the quarter-master, who conns the ship, stands when *steering*, or going with a free wind.

And:

The quarter-master during ordinary watches conns the ship and stands beside the wheel at the conn, unless close-hauled, when his station is at the weather side, where he can see the weather-leeches of the sails.

This of course refers to the time when the double binnacle had split into two halves, as will be discussed later, and when the introduction of the wheel had enabled the helmsman to be higher in the ship. The quarter-master was able to be on the same deck as the helmsman and still see the sails when required, but while the helmsman was still on the middle deck,

1 Public Record Office, *Navy Board Instructions to Dockyards*, Adm. 106/2508, no. 898.
2 Steel, *op. cit.* p. 8 and folio xvi.
3 Public Record Office, *Letters from Admirals*, Adm. 1/630, no. 214*a*.
4 Saverien, *op. cit.* Vol. II, plate II.
5 Admiral W. H. Smyth, *Sailor's Word-Book*, revised by Sir E. Belcher (1867), p. 102, art. Binnacle; p. 209, art. Conn.

as in the section of the ship shown by Harris in 1704,[1] this would have been impossible.

In 1696 Lieutenant Edward Harrison alluded to 'the upper or lower beetackle',[2] implying that the second binnacle was on a higher deck.

As stated by several writers, compartments in the binnacle were intended for the glasses and the like. This part of the binnacle sometimes took the form of drawers and no doubt all sorts of miscellaneous objects found their way into them. Captain Cook kept the keys of the leg-irons in the binnacle,[3] while Captain Bligh thought his a suitable stowage for a pair of pistols.[4] The admonitions of Smith, Fournier, Mainwaring, Ozanam, Aubin, Knight and Saverien[5] against the use of iron nails in the construction of binnacles were also frequently ignored.

A remark by John Rawlins in 1621 shows that this ship had a double binnacle containing two compasses,[6] and a study of the quotations already given will show that such a double binnacle was firmly established. Several writers, among them Joseph Harris (1730),[7] such Frenchmen as D'Apres de Mannivillete (1771), Fleurieu (1773) or De Gaulle (1779)[8] and William Hutchinson,[9] wrote of the inadvisability of the practice since the two compasses might adversely affect each other through being too close. It is not until 1847, however, that we read of the Superintendent of the Compass Department, Captain E. J. Johnson, requesting that a 'binnacle might be cut in two and the compasses separated'.[10] This must have been one of the last references to the double binnacle.

The use of a pair of binnacles, placed one on each side of the wheel, instead of a double binnacle possibly originated in France. This arrange-

1 Harris, *op. cit.* Vol. II.

2 Lieutenant Edward Harrison, *Idea Longitudinis: being a brief Definition of the best known Axioms for finding the Longitude* (1696), p. 29.

3 James Cook and James King, *A Voyage to the Pacific Ocean...in the Years 1776–1780* (1st ed. 1784), Vol. I, p. 50.

4 *Log of the Bounty* (1937), Vol. I, p. 42.

5 Smith, *op. cit.* p. 11; Fournier, *op. cit.* bk. III, ch. XXXV, p. 61 (1667 ed. p. 123); Mainwaring, *op. cit.* pp. 8–9; Ozanam, *op. cit.* p. 279; Aubin, *op. cit.* p. 478; Gowin Knight, 'Of the Mariner's Compass, that was struck by Lightning', &c. *Philosophical Transactions of the Royal Society*, Vol. XLVI (1749), p. 654; Saverien, *op. cit.* Vol. II, p. 50.

6 Samuel Purchas, *Purchas His Pilgrimes* (1625), Vol. II, bk. VI, p. 895 (1905 ed. Vol. VI, p. 168).

7 Joseph Harris, *A Treatise of Navigation* (1730), p. 191.

8 D'Apres de Mannivillete (1771); E. Fleurieu, *Voyage effectué en 1768–69 pour éprouver en mer les horloges marines* (1773); De Gaulle, *Nouveau Compas azimuthal à reflexion* (1779). These are quoted by H. Bencker, 'Historical and bibliographical Index concerning the Development and Improvement of the Compass, *Hydrographic Review*, Vol. XVIII (1941), pp. 140–1.

9 William Hutchinson, *A Treatise on Naval Architecture* (4th ed. 1794), p. 145.

10 Captain Edward J. Johnson, *Practical Illustrations of the necessity for ascertaining the Deviation of the Compass* (1st ed. 1847), p. 28.

ment will be seen in the model in Portsmouth Dockyard of the French 16-gun brig *Supérieure*, captured in 1803, while H.M.S. *Tonnant* in 1818 also had a pair, for Lieutenant Reneau remarks:[1] 'Mr. Stebbings Binnacle was then placed between the two Steering Binnacles'. The *Tonnant* was a French 84-gun ship built at Toulon in 1791 and taken at the Nile. She had possibly retained her French binnacles. On the other hand, in an enclosure to the same report, the Captain of H.M.S. *Vengeur* clearly implies that she also had twin binnacles, and despite her name she had been built at Harwich. The use of twin binnacles in the Royal Navy had become established by about the middle of the nineteenth century,[2] probably as a result of Captain Johnson's efforts. As we have already seen, Admiral W. H. Smyth refers to them in 1867,[3] and in 1889 in the *Century Dictionary* we read:[4] 'Men of war generally carry two steering-binnacles, one on each side of the steering wheel, for the steering-compasses, and an azimuth binnacle in a convenient place to hold the azimuth compass.'

In small ships a single binnacle was sometimes fitted and made to traverse from side to side so that it could be seen by the helmsman from whichever side of the wheel he was using.[5]

In the middle of the nineteenth century, while men-of-war generally had two binnacles for steering compasses, merchant vessels had only one.[6]

About the year 1800 several attempts were made to improve the design of binnacles. Admiralty Correspondence in the Public Record Office refers to the trial of binnacles designed by James Heriot (1783–4), Peter Burt (1811–13) and Grant Preston (1812–16). Burt's binnacle was also tried during Ross's Arctic voyage of 1819.[7]

In the years 1812–18 a binnacle designed by Captain Sir Home Popham and made by George Stebbing, a compass maker of Portsmouth, was tried in the Royal Navy and finally adopted as the regular pattern. The chief points about this binnacle seem to have been the fitting of the compass gimbals directly into the binnacle, instead of putting in the compass in its box, and the lighting of the compass cards from below, a feature also of a binnacle patented by Smith and Harris in 1809[8] and one which was

1 Public Record Office, *Letters from Admirals*, Adm. 1/630, no. 214*a*.

2 May, 'The Binnacles of Ship Models', *loc. cit.*

3 Smyth, *op. cit.* p. 102.

4 Vol. I (1889), p. 557, art. Binnacle.

5 *Practical Rules for ascertaining the Deviations of the Compass which are caused by the Ship's Iron* (1842), p. 8. The passage referred to remained through all editions (including the major revision of 1855) up to 1889, finally disappearing from the 1892 edition.

6 'Compass Deflection', *Nautical Magazine*, Vol. X (1841), p. 344.

7 John Ross, *A Voyage of Discovery, made under the Orders of the Admiralty, in his Majesty's Ships 'Isabella' and 'Alexander' for the Purpose of exploring Baffin's Bay, and enquiring into the Probability of a North West Passage* (1819), p. cxxv; (2nd ed. 1819), Vol. II, p. 223.

8 Patent no. 3265 of 1809.

afterwards claimed as the invention of Stebbing.[1] At about the same date Dollond designed a single cupboard-type binnacle in which the compass card was viewed through a lens. This binnacle was illustrated by Burney.[2] In 1812 Rowland patented a binnacle[3] in which the two compasses were placed near the top with lockers below instead of the opposite arrangement which was usual.

When Sir Home Popham's binnacle was finally adopted for the Navy in 1817 specimens were sent to each dockyard. In those days binnacles for the Royal Navy were generally made in the dockyards, and though by the middle of the century some were made by contractors[4] the practice did not completely die out until 1889 when the Thomson compass was adopted for the service. Sir William Thomson refused to sell his compasses without the rest of the equipment so the binnacles had to be purchased from him as well. The practice of buying binnacles from compass makers has been followed from that time.

It is of interest to note that the cost of binnacles made in Portsmouth dockyard in 1813 was £2. 13*s*. 0*d*. for a double and £1. 17*s*. 0*d*. for a single.

Binnacles were originally only used for steering and conning compasses but not for azimuth compasses. In fact, until well on in the nineteenth century, compasses without azimuth fittings were usually referred to as *binnacle compasses*. The azimuth compass was either carried about in its box, or placed on a tripod, and was used where most convenient. In 1812 Captain Matthew Flinders[5] recommended that the position of the azimuth compass should be fixed, and seems to have visualized using it as a standard compass as we know it to-day. Captain Bartholomew of H.M.S. *Leven* was one of the first to adopt this plan and 'had a pedestal erected just before the mizen mast, which is the best place for it, and would be a handsome and useful ornament upon the poop of any ship'.[6] Azimuth compasses on tripods were, however, used at least as late as 1840.[7]

1 *Correspondence with Admiralty*, Admiralty Compass Observatory, Vol. M/1, letter dated 22. 1. 1848. In 1848 Stebbing's widow petitioned the Admiralty for compensation for her husband's inventions and Captain E. J. Johnson, the Superintendent of the Compass Department, commented: 'There are no records in any office to shew who was the first proposer or inventor of the Transparent Compass Cards, Ruby Points and lighting the Compass from the Main Deck, I believe however the late Mr Stebbing to have had that merit.'

2 Burney, *op. cit.* plate II, fig. 8.

3 Patent no. 3525 of 1812.

4 For example Dennis, 118 Bishopsgate Street, London (*Miscellaneous Correspondence*, Admiralty Compass Observatory, Vol. M/3, letter dated 16. 6. 1849).

5 Captain Matthew Flinders in an enclosure to an Admiralty Letter to all Captains, dated 21. 9. 1812. *Naval Chronicle*, Vol. XXVIII (1812), pp. 321–3.

6 Thomas Lynn, *Nautical and Astronomical Tables* (1825), p. 42.

7 Henry Raper, *The Practice of Navigation* (1st ed. 1840), p. 41.

When the standard compass first came into use it was usually mounted in a metal urn on the top of a solid wood or tubular metal pillar. In fact, in Admiralty correspondence, the support for the standard compass was generally known as the pillar, the word binnacle appearing for the first time, in this connexion, in 1845.

A study of ship models of the last century shows many examples of these pillars.[1] It is probable that they finally ousted the cupboard type soon after 1850, only themselves to give way to the built-up type adopted by Sir William Thomson and the metal types popular abroad, all of which were designed to accommodate correctors. Pillar binnacles are, however, still met with as a cheap form often used for the after compasses of merchant vessels.

While Barlow's plate was attached to the binnacle, or rather pillar, in 1820, and Airy[2] and Rundell[3] had experimented with forms of correctors in 1838 and 1855–60 respectively, it was in 1854 that Gray produced the first binnacle with anything approaching a complete system of correction.[4] The correction of compasses and the forms of binnacle which the use of correctors entails is however another subject and outside the scope of this article.

In conclusion, it may be of interest to record that in the middle of the nineteenth century brigs of the Royal Navy were fitted with hinged or telescopic pillars, for their standard compasses, which could be folded over or lowered when necessary to clear the boom.[5] In the same century there was a vogue for ornate binnacles. For example, the Royal Yacht Squadron in 1829 presented a bronze binnacle to its Commodore, the Earl of Yarborough, in which the urn containing the compass was supported on the back of a sea-gull. The tails of three inverted dolphins made a common form of support while the S.S. *Himalaya* of 1853 appears to have had a carved human figure.

These brief notes show how little is actually known of the early history of the binnacle. The writer would be grateful to have his attention drawn to the existence of any further information on the subject, particularly on the following points:

1 May 'The Binnacles of Ship Models', *loc. cit.*

2 G. B. Airy, 'Account of Experiments in iron-built Ships instituted for the Purpose of discovering a Correction for the Deviation of the Compass produced by the Iron of the Ships', *Philosophical Transactions of the Royal Society*, Vol. CXXIX (1839), part 1, p. 167.

3 W. W. Rundell, *First and second Reports of the Liverpool Compass Committee* (1857), pp. 27–31; *Third Report from the Liverpool Compass Committee* (1861), pp. 17, 26, 30, 34, etc.

4 Patent no. 2741 of 1854.

5 *Correspondence with Admiralty*, Admiralty Compass Observatory, Vol. M/o, letter dated 31. 8. 1848.

Alternative methods of spelling, and any additional references to the binnacle before 1600.

Examples of the use of the words *habitacle*, *bitacola*, and *bitacula* by French, Portuguese or Spanish writers before 1640.

Details of the position of the conning compass in the seventeenth and eighteenth centuries.

Pictures showing a binnacle, particularly in a ship, before 1700.

M. H. TROMP, 1598–1653

By C. R. Boxer

THIS article does not contain anything new for those who can read Dutch and who have had access to Dutch historical literature during the last twenty-two years. Readers unacquainted with that language might, however, like to have a biographical sketch of Tromp in English, which takes into account the relevant material published in Holland during that time. The researches of F. Graefe and M. G. de Boer in the Dutch archives have brought much new material to light, but our detailed knowledge of Tromp's life is still limited to three main periods: his captain's years in the North Sea, the Channel and the Bay of Biscay from 1624 to 1634; his campaigns of 1637–9, culminating in the great victory of the Downs; and the Anglo-Dutch war of 1652–3, which was virtually ended by his death at Ter Heide. Although there are many gaps in the rest of the story, and we have disappointingly little information about his earliest years at sea, his career as a whole is now much clearer than that of his great antagonist, Robert Blake.[1] I may add that since Tromp's contribution to the development of naval tactics and strategy can only be discussed adequately by a professional seaman, I have chosen here to concentrate on the personal side of his life. This aspect is, in any case, far less known in this country than is his role as an outstanding exponent of naval warfare.

Maerten Harpertszoon Tromp was born in Den Briel on 23 April 1598, and baptized in St Catherine's church on 3 May following. His parents were Harpert Maertenszoon and Jannetgen Barents, and he proved to be their only son, although in due course they provided him with three younger sisters. We know nothing of his earliest childhood beyond the fact that his parents moved to Rotterdam in 1606. In later years, hostile pamphleteers twitted him with the fact that his father was originally a trumpeter, and his mother had washed sailors' shirts for a living. This was probably true enough; but when the family moved to Rotterdam, Harpert Maertenszoon was already an officer in the naval service of the States-General, and he obtained his first ship (a Rotterdam yacht with a crew of thirty) in the same year.[2]

1 Who, incidentally, was born in the same year, some five months later.

2 F. Graefe, *De Kapiteinsjaren van Maerten Harpertszoon Tromp* (Amsterdam, 1938), pp. 1–4. Dr Graefe has also published a number of articles in German, but the fruits of his researches are embodied in this Dutch version of his work.

In 1607, the nine-year-old Maerten sailed with his father in the fleet of Jacob van Heemskerck which destroyed a Spanish squadron in the Bay of Gibraltar on 25 April. Young Tromp himself could not have seen a great deal of the actual battle, as his father's yacht was detached to cruise off the mouth of the Bay to intercept fugitives, and the smoke and fumes from the burning Spanish vessels soon obscured the view.[1] But this experience must have made a great impression on the young Tromp, and formed a stirring beginning to his apprenticeship at sea. This apprenticeship was continued during the next three summers when his father's yacht was employed on convoy duty in the North Sea and in the Channel. Maerten accompanied his father on all these cruises, including a trip up the Thames to London with the Dutch envoys who came over in March 1610.[2] His father left the naval service on his return to Holland in June of this year, and began to sail as a merchant-skipper on his own account to West Africa, but this first voyage to Guinea proved to be his last.

Off the Cape Verde Islands Harpert Maertenszoon's ship was attacked by a squadron of seven sail of English pirates, commanded in all probability by the notorious Peter Easton. The Dutch skipper was killed after a courageous resistance and the ship was then boarded by the English. Tradition claims that the dispirited crew's first inclination to surrender after the death of their captain was temporarily checked by the eleven-year-old Maerten's despairing cry 'won't you avenge my father's death?' However this may be, it is an established fact that Maerten served his captors as a cabin-boy during the next two years, until Easton's squadron was disbanded in the harbours of Savoy.[3] We know nothing of his doings during his enforced service with the English; but it is obvious that this experience, however unpleasant, must have been of the greatest value to him in after-life. It also accounts for his good knowledge of the English language—an accomplishment which was not nearly so common among seventeenth-century Netherlanders as it is among their present-day descendants.

It was not until young Maerten's return home in 1612, that his mother learnt for certain of her husband's death, and now the boy had to support her and his three sisters. For a few years he worked in a shipyard at Rotterdam, but after a merchant-voyage to Rouen of which no details are recorded, he joined the navy in June 1617. He was mustered as quarter-master under Moy Lambert, and participated in the latter's successful expedition to the Mediterranean in 1618–19, when (in co-operation with

1 F. Graefe, *Kapiteinsjaren*, pp. 5–7.

2 Tromp and his father stayed in the Thames till 8 May. F. Graefe, *Kapiteinsjaren*, p. 9.

3 F. Graefe, *Kapiteinsjaren*, pp. 10–12. For Easton's career as a pirate see *The Life and Works of Sir Henry Mainwaring* (N.R.S. edition), Vol. I, pp. 7, 21–23; Vol. II, p. 21.

the Spaniards) a total of sixteen Barbary corsairs were taken or burnt, and Algiers was bombarded. Tromp was promoted after a skirmish off Tunis; but he left the navy when Moy Lambert's squadron was demobilized after its return home, hoping to find more profitable employment in the Dutch merchant shipping which was increasingly frequenting the Mediterranean.[1]

His second venture in the merchant service, however, ended as disastrously as his first had begun. After a year's interport trading in the Mediterranean, he left his employer to return home, but the ship in which he took passage was captured by Tunisian pirates. Tromp spent about a year as a slave of these Barbary rovers, and was evidently employed by them either as a gunner or as a navigator. At any rate, the Bey of Tunis himself offered him a high post in his sea-service which was then largely manned by Dutch and English renegades. Tromp sturdily refused this offer, but he was nevertheless allowed to return home (via London) in the summer of 1622.[2] He immediately re-enlisted in the navy and was posted as a lieutenant to the *Bruynvisch* (12), Captain Cornelis Cornelisse d'Bagijn.[3] His service in the Atlantic in 1622–3 was not particularly eventful, but he must have given exceptional satisfaction to his superiors, for in June 1624, he was commissioned as captain of his first ship, the *St Antonius*, a convoyer with a crew of forty. A few weeks earlier he had been married to his youthful sweetheart, Dina (or Dingom) de Haas, in Den Briel. The second son of this union was christened Cornelis (September 1629), and was destined to be hardly less distinguished as an admiral than his father.

Dina de Haas did not see much of her husband for the nine years of their married life, as he spent most of his time at sea during the decade 1624–34.[4] It is worth noting that his service was almost exclusively in the North Sea, the English Channel and the Bay of Biscay. Unlike many of his contemporaries—Heemskerck, Piet Heyn, Witte de With, Houtbeen, to name only a few—he never served in Asian or American waters, nor did he revisit the Mediterranean after his release from Tunisian captivity in

1 F. Graefe, *Kapiteinsjaren*, pp. 12–14. For the growth of Dutch shipping and trade in the Mediterranean, see: A. de Booy, 'Holland in the Mediterranean (1607–1704)', in *The Mariner's Mirror*, Vol. xxv (1939), pp. 401–9; H. Wätjen, *Die Niederländer im Mittelmeer-Gebiet zur zeit ihrer höchseten Machtstellung* (Berlin, 1909).

2 F. Graefe, *Kapiteinsjaren*, pp. 15–16. For the Dutch and the Barbary pirates at this period see R. E. J. Weber, *De beveiliging van de zee tegen de Europeesche en Barbarijsche zeerovers, 1609–1621* (Amsterdam, 1936).

3 F. Graefe, *Kapiteinsjaren*, pp. 17–19. 'Bagijn' was presumably a nickname or *nom-de-guerre*, derived in this instance from the Belgian Béghines or Béguines, women who lived in a religious community but who were not nuns. The Dutch were very fond of peculiar sobriquets at this period, some of Tromp's contemporaries rejoicing in such names as Bon Garçon, Keert de Koe, Gloeiende Oven, and (most unflattering of all) 't Aersgat.

4 F. Graefe, *Kapiteinsjaren*, pp. 19–83 for details.

1622. He had, of course, plenty to do nearer home. The organization of a Flemish admiralty at Dunkirk by Ambrosio Spinola proved to be the best card that Spain ever played in her eighty-years war against the United Provinces. From the very first, the privateers based on Dunkirk and Ostend took a substantial toll of Dutch shipping, and at times their ravages assumed catastrophic proportions. Ably seconded by the Biscayers, the Dunkirk frigates did more harm to the Dutch than all the other Iberian fleets and armies put together. So infuriated were the burgher-oligarchs, who comprised the Dutch governing class, at the losses which they suffered, that at one time they forbade their sea-captains to give quarter to captured Dunkirkers. It was expressly ordered that all those taken alive should be bound back to back in pairs and thrown overboard into the sea.[1] The Dunkirkers naturally retaliated in kind; and though these mutual reprisals were soon somewhat relaxed in consequence, the fighting was frequently of the most savage description, quarter being refused as often as not.

Sir William Monson once observed that the results of this bitter struggle tended 'more to the commendation of the Dunkirkers than the Hollanders'.[2] Monson, like most of his countrymen, was inordinately jealous and spiteful where the 'damned Dutch' were concerned; but it must be admitted that the Dunkirkers frequently gave better than they got, even in fights with well-gunned Dutch warships. Such successes as the Dutch did obtain were therefore all the more welcome, and Tromp speedily became renowned as one of the Dunkirkers' most successful opponents. He received a striking testimony to his professional worth when Piet Pieterszoon Heyn, the captor of the Spanish silver-fleet in 1628, selected him as his flag-captain when he hoisted his flag in the *Groene Draeck* (26) as commander-in-chief of the Dutch navy in May, 1629. Piet Heyn was killed at the beginning of an action with three Ostenders a few weeks later (18 June), but Tromp pressed home the attack so vigorously that all three of the enemy were finally taken by the Dutch.[3] Other successes followed in the next four years, and, what was perhaps even more important, Tromp became familiar with the English coast and the Narrow Seas in all seasons and in all weathers.

1 This practice was known as 'voeten spoelen' or 'voetspoeling', lit. 'cleaning (or "washing") the feet'. It is related of one of the Dutch commanders who had to carry out these orders, Cornelis Jol, nicknamed Houtbeen ('peg-leg' or 'timbertoe'), that he paced the deck of his ship while the prisoners were being bound and thrown overboard, pointing in the direction of the Hague from time to time and exclaiming, 'For your account, my lords the States, for your account!' Cf. S. Kalff, 'Verzuimd Brazil', in the *Gids* (May 1899), pp. 206–7. Cf. also *The Mariner's Mirror*, Vol. xxv (1939), p. 409.

2 W. Monson, *Naval Tracts* (N.R.S. edition), Vol. iv (1913), p. 96; Vol. v (1914), p. 315. The standard work on the Dunkirkers is H. Malo, *Les Corsaires Dunkerquois et Jean Bart*, 2 Vols. (Paris, 1912).

3 F. Graefe, *Kapiteinsjaren*, pp. 36–9.

After Piet Heyn's untimely death, Tromp had served under Lieut.-Admiral Philip Van Dorp and Vice-Admiral Jasper Liefhebber. His unexpected resignation from the sea-service in the summer of 1634, was for long ascribed to the jealousy of these two senior officers who had not been nearly as successful against the Dunkirkers as had their subordinate. There was probably something in this allegation, and Van Dorp certainly showed himself to be bitterly jealous of Tromp in later years; but the relevant official correspondence indicates that Tromp resigned of his own free-will 'owing to some other good condition having befallen him'.[1] Family reasons were probably included, as his first wife had died in 1633, and in September 1634 he married another young woman from Den Briel. Moreover, Tromp was of a deeply religious nature and evidently desirous of a closer connexion with the Calvinist ministry, since his resignation from the navy coincided with his assumption of the office of deacon in one of the Rotterdam churches.

Whatever the real reasons for his resignation, he had only been fifteen months on shore when he was offered the temporary command of the fleet against the Dunkirkers, with the rank of vice-admiral. This offer was motivated by the disaster which had befallen the Dutch fishing fleet in August 1635, when the famous Dunkirk corsair, Jacques Colaert, dispersed and destroyed the herring-fishers off the Dogger Bank. Although the States of Holland earnestly pressed Tromp to assume the command, he flatly declined to do so, on the grounds that his acceptance would be an unforgivable affront to his old commanders. Van Dorp was not in the least grateful for Tromp's chivalrous consideration, and he declared, twelve years later, that if Tromp had accepted this offer 'he would have broken his legs to pieces had he endeavoured to set foot in his flagship'.[2]

Although Tromp declined this opportunity of securing a high command afloat, ten months later he accepted an offer to become one of the Directors of the Rotterdam Admiralty who were responsible for the commissioning, provisioning and maintenance of their section of the fleet (*Directeur 's Lants equipagie*). This was of course a shore job, but it gave Tromp much additional experience in the financial side of naval administration. It also brought him into open conflict with Van Dorp, each accusing the other of inefficiency and neglect in fitting out ships for the sea and in maintaining them when there. In the circumstances, quarrels and disputes were inevitable, particularly with such a penurious admiralty as that of Rotterdam which was

1 'Vermits seeckere andere goede conditie hem voorgevallen.' Cf. F. Graefe, *Kapiteinsjaren*, pp. 82–3. For Tromp and Van Dorp, see also M. G. de Boer, *Het proefjaar van Maarten Harpertz. Tromp 1637–1639* (Amsterdam, 1946), pp. 10–35.

2 F. Graefe, *Kapiteinsjaren*, pp. 88–90; M. G. de Boer, *Het proefjaar van Tromp*, p. 16.

always short of money.[1] Shore-based administrators and admirals at sea often found it difficult to co-operate in the seventeenth century, and readers of Pepys will have no difficulty in recalling similar mutual recriminations on this side of the North Sea during the Anglo-Dutch wars.

When on 1 October 1637, the fleet blockading Dunkirk returned prematurely and against orders to Dutch ports, on the plea that provisions were exhausted, popular and official exasperation against Van Dorp reached its height. Liefhebber had just resigned his commission on account of his unpopularity with the common people, and Van Dorp now followed suit rather than explain his conduct to the States-General. In the list of candidates for the vacant posts of lieut.-admiral and vice-admiral which was submitted to the Stadhouder Frederick Hendrick for his selection, the states of Holland strongly recommended Maerten Harpertszoon for the former post and Witte Corneliszoon de With for the latter. The Stadhouder agreed with this choice, and the official announcement of these two appointments received enthusiastic popular approval. 'We are full of hope that these new commanders will redress the course of things at sea, which Maerten Harpertsz. is the more obliged to try to do, since he has often censured the conduct of his predecessor.'[2]

Tromp was the third 'tarpaulin' to be made lieut.-admiral of Holland and Westfriesland, his only forerunners in this respect having been Jan Van Heemskerck in 1607 and Piet Heyn in 1629. But if Tromp's personal and professional qualifications made an exceptional impression on the Prince of Orange and Their High Mightinesses at the Hague, they did not unduly impress another of Piet Heyn's old flag-captains. This was his fellow townsman from Den Briel, the Vice-Admiral Witte Corneliszoon de With, who, although a year younger than Tromp, could never bring himself to co-operate wholeheartedly with his lawful superior for any length of time. The original reason for 'Dubbel-With's' intense dislike of Tromp is not apparent, but possibly he resented the fact that Piet Heyn had found Tromp an even more satisfactory flag-captain than himself.[3] He was a son of pacifist Mennonite parents, and ran away to sea at an early age. His seagoing experience was much wider than that of Tromp, since he had sailed round the world with the 'Nassau-fleet' in 1623–6, apart from earlier

1 F. Graefe, *Kapiteinsjaren*, pp. 91–109; M. G. de Boer, *Het proefjaar van Tromp*, pp. 19–20.

2 Letter of N. van Reigersberch to Hugo de Groot, 25 October 1637. Cf. F. Graefe, *Kapiteinsjaren*, pp. 110–32; M. G. de Boer in *Tijdschrift voor Geschiedenis*, Vol. LV (Groningen, 1940), pp. 337–46; *ibid. Het proefjaar van Tromp*, pp. 32–8.

3 Piet Heyn declared 'that he had had many brave captains under his command, but that he had always found some faults in them, but never in Tromp who combined all the qualities of a fine seaman and a good Christian'. *Praatje van den ouden en nieuwen Admiraal* (Amsterdam, 1653), p. 22.

service in the East Indies (1616–19), and later as Piet Heyn's flag-captain in the Caribbean.[1] But his more varied experience and unsurpassed personal courage were offset by a ferocious temper and an almost insane jealousy of his equals and superiors. He was also an exceptionally harsh disciplinarian even in an age when the lash and keel-hauling were common punishments. His boorish ferocity was a byword among his own men, and formed a glaring contrast to Tromp's strict but fatherly discipline which soon earned from his crews the affectionate nickname of 'Bestevaer' ('Dad'). Personal courage and consummate seamanship were two qualities which both men had in common; but in every other particular their characters were utterly opposed, and their mutual dislike (amounting on de With's side to downright hatred) only increased with the years.

Tromp's assumption of the command at sea coincided with a crisis in the Thirty Years War which may be summarized as follows. There were two routes by which the Spaniards could reinforce their possessions in the Southern Netherlands: by sea from Barcelona to Genoa, and thence overland via North Italy and the ecclesiastical states along the Rhine valley (the so-called Bishops' Road), or by the Atlantic sea-route through the Channel. Of these two ways, the last was by far the cheaper and the shorter; but it was also the more dangerous until the entry of France into the war (1635) and the victory of Bernard of Sax-Weimer over the Imperialists at Rheinfelden (February 1638) closed the Bishops' Road altogether. From 1631 onwards, the Spaniards made increasing use of the Atlantic route, and for some time with remarkable success. As a rule, the troop transports consisted of hired merchant-ships (many of them foreign) which were picked up in the Biscayan and Cantabrian harbours by frigates from Dunkirk which then convoyed them through the Channel to their destination. Van Dorp and Liefhebber had signally failed either to keep Dunkirk effectively blockaded or to intercept the Spanish convoys *en route*.[2]

Nor were Tromp and De With more fortunate in their first campaign. In the dark winter night of the 11/12 December 1637, Don Lope de Hoces, who had already run the Dutch blockade successfully in the previous September, slipped past the Dutch admirals in the Channel, and shortly after entered Dunkirk with thirty-eight ships carrying 5000 men and a large quantity of silver bullion. His return voyage in the following March was equally successful, and he entered La Coruña with a number of French and

1 For Witte de With and his career at sea cf. S. P. L'Honoré Naber (ed.), ''t Leven en Bedrijff van Vice-Admirael De With zaliger', in *Bijdragen en Mededelingen van het Historisch Genootschap, Utrecht*, Vol. XLVII (Utrecht, 1926).

2 For details see F. Graefe, 'Militärische Seetransporte von Spanien nach Flandern, 1631–1639', in the *Marine Rundschau* (Berlin, 1927), pp. 25–33, 59–67, 108–20.

Dutch prizes which he had picked up in the Bay of Biscay. The presence of a French fleet off the northern Spanish coast in 1638 prevented the Spaniards from sending anything by sea that year; but after the relief of Fuenterrabia (22 August 1638) and the ignominious rout of the invading French army, the Spanish government resolved to renew their efforts in 1639 on a greater scale than had been attempted since the armada of 1588. Tromp's campaign at sea in 1637–8 might seem therefore to have been no great improvement on Van Dorp's performance, but the events of 1639 were to prove otherwise. His handling of ships and men during those weary months, and in a successful battle with the Dunkirkers in February 1639, inspired his crews with far more confidence in him than they had ever had in Van Dorp.[1] From the experience gained in 1637–8, Tromp distributed his fleet in the summer of 1639 in such a manner that the Spaniards could hardly have evaded him, even if they had wished to do so.

In point of fact, the Spanish commander-in-chief, Don Antonio de Oquendo, was spoiling for a fight. Apart from his own inclination, he had received categorical orders from Madrid to fight the enemy, whether French or Dutch, wherever and whenever he might meet them, even in English harbours and regardless of English neutrality.[2] The Spanish armada which left La Coruña on 27 August 1639 was composed of seventy-five sail, including about forty-five warships, the remainder being merchantmen hired as troopships. Among these last were eight stout English ships which left Oquendo's flag the same day and sailed straight to Plymouth, where they remained for some weeks with their 1800 soldiers rather than run the gauntlet of Tromp's fleet in the Channel. Tromp, who had been 'plying to and again' between Portland Bill and the Race of Alderney since early in May, either searched or interrogated virtually every merchant-ship that came up (or down) the Channel. He thus kept himself informed not only of the mobilization of the armada, but of the whereabouts of French and English warships. On one occasion he intercepted three English merchantmen carrying more than a thousand Spanish soldiers whom he forced the English to hand over and subsequently landed in France. On the afternoon of 15 September 1639, Tromp was cruising off Beachy Head when the long-expected armada was sighted sailing up the Channel with a fair west wind. Tromp had only thirteen sail against Oquendo's sixty-seven, but he sent a ship to recall his other detachments which were cruising in the straits of Dover and off Dunkirk. Witte de With arrived with five sail the next day,

1 J. C. M. Warnsinck, 'Tromp en de slag op de reede van Duins', in the *Marineblad* (1940), pp. 1183–4, reprinted in his *Van Vlootvoogden en Zeeslagen* (1940); M. G. de Boer, *Het proefjaar van Tromp*, pp. 37–52.

2 C. R. Boxer (ed.), *Journal of M. H. Tromp, Anno 1639* (Cambridge, 1930), p. 14.

and Tromp then summoned a council of all his captains at which it was unanimously decided to give battle.

Although the condition of the Spanish armada left a lot to be desired, and his ships were crowded with sea-sick raw recruits, Oquendo bore down full of confidence on the Dutch fleet. His only orders to his captains at a hurriedly convened council were 'Well, gentlemen! The enemy is nothing much; let each one do his best; I've got a fine horse, and the flagship will give a good example.'[1] After six hours' hard fighting, Oquendo's ardour was cooled and he drew off to repair damages, having sustained 150 casualties in his flagship alone. Lack of wind prevented the action from being renewed next day, but the Dutch were reinforced by Banckert's squadron before dawn on the 18th, and it was Tromp who took the offensive early that morning. The action raged in the straits of Dover until the afternoon when Tromp, having exhausted all his gunpowder, stood over to Calais to obtain fresh supplies, while Oquendo took his battered ships into the neutral roadstead of the Downs. Next day Tromp, having received 28,000 lb. of gunpowder and 2000 shot from the French, sailed back to the Downs where the Spaniards lay in a helpless swarm, protected by a squadron of Charles I's 'ship-money' fleet under the command of Sir John Pennington.

The presence of these three fleets in the Downs caused a great deal of diplomatic activity in London; for, as Peter Mundy noted in his journal, it was 'a doubtfull State businesse, soe intricate thatt the like hath nott hapned to England these Many yeares. How itt possibly May bee carried without the incurring ill will off one off the 3 Nationes, Spanish, French or Dutch [God knows].'[2] There was a powerful party at Whitehall which was in favour of an alliance with Spain, and it was understood to have the good will of the King. On the other hand, Queen Henrietta Maria's influence was eventually exerted on the Franco-Dutch side, and there were many Englishmen to whom Roman Catholic Spain was an abomination. It is true that when the Dons sighted Devon, it was left to Tromp and De With 'to drum them up the Channel as Drake drummed them long ago', but it was not only the Puritans in England who rejoiced at the Spaniards' discomfiture. There were plenty of Englishmen who went about telling one another that this armada was not bound for Dunkirk at all; it was coming to provide King Charles with thousands of Spanish soldiers to be used for

1 C. R. Boxer (ed.), *Journal of M. H. Tromp, Anno 1639*, p. 33, where the translation in note (2) should be corrected. One is reminded of Prince Rupert's outburst to Samuel Pepys: 'God damn me, I can answer but for one ship, and in that I will do my part; for it is not in that as in an army, where a man can command everything.' Pepys's *Diary*, under 5/15 September 1664.

2 *The Travels of Peter Mundy* (Hakluyt Society edition), Vol. IV, *Europe, 1639–47* (London, 1925), pp. 39–41.

the destruction of English liberties and of the true Protestant religion.[1] In reality, the King and his ministers were primarily thinking of using the Spaniards' predicament to extract from them as much money as possible, by what can only be termed downright blackmail.[2]

When news reached the Netherlands that Tromp had forced Oquendo to take refuge in the Downs, the two thoroughly maritime provinces, Holland and Zeeland, rose to the occasion. Sailors came forward in such numbers that room could hardly be found for them, and warships of every kind were fitted out and sent to the Downs so speedily that the astonished Spaniards asked if it rained ships in Holland. As early as the 21 September, the States-General sent secret orders to Tromp to attack Oquendo's armada wherever and whenever he might find himself strong enough to so. They further enjoined him to repel by armed force 'any French, English, Scots, Swedes, Danes, Poles or Easterlings' who might try to stop him. Naturally their High Mightinesses did not expect any interference from their French allies, or from Baltic peoples who were conspicuous by their absence; but this comprehensive list of possible enemies avoided stressing the fact that it was only the English who were envisaged.

The weeks of waiting which followed showed that Tromp was not only a great admiral but also a brilliant diplomatist. He himself declared to Pennington's skipper, Peter White, whom he saw almost daily, that his English was 'not very good'; but it is obvious from Peter White's own journal that Tromp understood English very well, even if he did not speak it faultlessly. This journal is full of intimate glimpses of Tromp which show how tactfully he handled the prickly English, including aristocratic sightseers like Lord Conway (who had the effrontery to suggest that Tromp should give up his own cabin to his lordship 'that he might set up a bed-stead in it'), and how cleverly he avoided committing himself when 'pumped' by Peter White.[3] Tromp fully appreciated Sir John Pennington's

1 The armada was never intended for England; but at one period Charles I was scheming with the Cardinal-Infant at Brussels to enlist about 10,000 men in Flanders under the command of an English Catholic officer, Henry Gage, in exchange for allowing the Spaniards to recruit 20,000 men in England and Ireland. Cf. *Clarendon State Papers*, Vol. II, pp. 19, 21, 23, and M. G. De Boer, *De Armada van 1639* (Groningen, 1911), p. 16.

2 Windebank, the Secretary of State, after one of his interviews with Cardenas, the Spanish ambassador at London, wrote to the English envoy in Madrid: 'But they must bleed well, and it must be money that must carry the business, and we shall do little for love of his or any other Madrid face', adding that if the Spaniards would not pay substantially for English protection then they could stay in 'Hob's Pound'. *Clarendon State Papers*, Vol. II, p. 74.

3 Peter White's journal was published ten years later by A. Burrell with a long-winded title beginning *A memorable sea-fight*, London, 1649. Copious extracts from this journal will be found in my edition of Tromp's journal for 1639, and the original edition of 1649 was subsequently reprinted and annotated by S. P. L'Honoré Naber in the *Bijdragen en Med. Hist. Gen. Utrecht*, Vol. LII (1931), pp. 1–62.

difficulties, and he went out of his way to save the latter's 'face' whenever he could do so without detriment to his ultimate purpose. Pennington had a singularly thankless task and on the whole acquitted himself admirably. As a staunch Protestant, his sympathies were chiefly with the Dutch, but he did his level best to maintain a strictly neutral attitude, although he could never get any categorical instructions from his shifty king.[1]

By the 10 October the Dutch were ready to attack in overwhelming force, and it only remained to decide the order of battle. At a council convened to discuss this matter (according to Witte de With) the commander of the Zeeland contingent, Vice-Admiral Johan Evertsen, was assigned to contain Pennington's squadron and to repel the English by force if they should attempt to interfere. Witte de With further alleges that Evertsen flatly refused to do so, ostensibly on the grounds that Zeeland's trade with England was too valuable for him to risk a breach with his province's best customer; but in reality (so Witte de With says) because 'the English were better seamen than the Spaniards, and had stout ships and many and fresh men, and might well be something too hard for him'. Witte de With then volunteered to take on this dangerous assignment, 'for', said he, 'if I must be in the bear-baiting pit, it is all the same to me whether I have an old or a young bear by the ear'.[2] Witte de With's aspersions on his brother admirals must always be regarded with the gravest suspicion, but I think that this particular allegation may have some substance in it. Not much, but some. I do not think that Johan Evertsen, the captor of Jacques Colaert (most feared of the Dunkirk corsairs) in 1636, was guilty of cowardice; but possibly for political reasons he was reluctant to face Pennington, and in any event it was Witte de With who was finally allotted this task.[3]

At daybreak on the misty morning of 21 October, Tromp launched his attack on the Spaniards, and although Pennington 'endeavoured seriously to protect and defend them', he was only able to prevent the Dutch from seizing those which ran themselves ashore between Deal and Walmer. Of Oquendo's armada of fifty-three ships which lay in the Downs that morning, by nightfall fourteen had been taken by the Dutch, twenty-six or twenty-seven driven ashore or burnt, and only twelve or thirteen were able to fight

1 The nearest he ever got to a definite order was the injunction 'you must make as handsome a retreat as you can in so unlucky a business'. *Cal. S. P. Dom. 1639–40*, no. 47; C. R. Boxer, *Journal of M. H. Tromp*, p. 59.

2 *Rotterdams Zee-praatjen*, Schiedam, 1653, pp. 24–5. My arguments against the authenticity of this story in the *Journal of M. H. Tromp, Anno 1639*, pp. 58–9, no longer appear to me to be convincing. The allegation was not denied in the pamphlet that was published in Evertsen's defence (Knuttel, no. 7433). Exaggerated or not, this story shows the difficulties with which Tromp had to contend in controlling his subordinates who were anything but a band of brothers. Cf. J. K. Oudendijk, *Maerten Harpertszoon Tromp* (The Hague, 1942), p. 176.

3 Cf. M. G. de Boer, *Tromp en de Armada van 1639*, pp. 112–14.

their way out of the roadstead and follow their leader into the safety of Mardyck and Dunkirk. About 5000 Spaniards were killed or drowned, and 1800 were taken prisoners by the Dutch, who, on their side, lost only one ship and about 100 men. Seldom was victory more decisive.

But although the Dutch victory was complete, it must be remembered that Oquendo's original mission of transporting troops to Flanders was largely achieved, even if his armada was sacrificed in the process. Apart from about 3000 men who were shipped over by the Dunkirkers on the night of 22/23 September, another couple of thousand were smuggled over by the English in October, and a good number were convoyed in November after the Dutch had departed. In one way or another about half of the troops who were originally embarked at La Coruña probably reached their goal, although in a most exhausted and pitiful condition.[1] Morally, the impression made by the battle of 21 October 1639 was great and lasting. Oquendo reached Laredo with the shattered survivors of the armada in March 1640, but he came ashore a broken man to die of a broken heart, like his father before him after the armada of 1588. No strong Spanish fleet henceforth ventured as far north as the English Channel for the remainder of the Thirty Years War; and the blow to Spanish power and prestige which was dealt by Tromp in the Downs was partly responsible for the successful start of the Catalan and Portuguese revolutions in the following year.

The affront given to King Charles 'in his chamber' on 21 October 1639 exposed the hollowness of his pretensions to the sovereignty of the Narrow Seas, and naturally annoyed him intensely. Moreover, his chance of blackmailing the Spaniards was now gone; and this, in all probability, annoyed him still more. As G. Edmundson wrote: 'Charles was in reality far more angry that Tromp had marred his prospects of striking a good bargain with one or other of the belligerents than at his venturing to infringe a neutrality which was actually in the market.'[2] The King was not, however, in a position to do anything about it. With Scotland in open rebellion, England seething with discontent, and an empty treasury, he could only fret and fume. The affair was used as a good excuse to press forward with the collection of 'ship-money', but when the States-General despatched a special envoy with soothing excuses and assurances, the matter was eventually allowed to drop, although the Dutch explanations were never officially accepted.

It may be added that the King bore no lasting grudge against Tromp for having carried out his government's orders. When Tromp visited Dover in

1 'It is pitiful to see', wrote the Cardinal-Infant to his brother, King Philip IV, on 21 October 1639, 'how many sick are landed here, and to hear the tales of how many died during the voyage.' De Boer, *De Armada van 1639*, p. 8.

2 G. Edmundson, *Anglo-Dutch rivalry during the first half of the seventeenth century* (Oxford, 1911), p. 128.

March 1642, to escort to Holland Queen Henrietta Maria and the Princess Royal with the squadron of Sir John Pennington, he was dubbed a knight by King Charles himself with (appropriately enough) Sir John's own sword. Tromp was evidently very pleased with this distinction, as he records it with a certain complacency in his journal. 'I falling on my knee, the King drew Sir John Pennington's sword from the scabbard at his side and struck me on my left shoulder; and that being done, I kissed the King's hand, and he helped me up and wished me good luck, as did all the nobility who were there in the chamber and in the house. I answered the King, "my life is for Your Majesty".'[1]

Sir Martin Tromp, as he was now entitled to call himself, does not appear under this name in seventeenth-century English literature, but he is frequently referred to then and later as Admiral Van Tromp or Van Trump. The better-informed Peter White writes simply 'Tromp' or 'Trump' in his journal; and only once, by an obvious slip of the pen, 'Van Tromp'. The prefix 'Van' was probably applied by Tromp's English contemporaries simply because he was a Dutchman; just as 'Von' was (and is) often gratuitously placed before a German's name, 'de' before that of a Frenchman, or 'Don' before a Spaniard's. Oddly enough, however, Tromp in his younger days *did* sometimes call himself, and was called by his own countrymen, 'Van Tromp', and even sometimes 'Van der Tromp'. Both forms appear on the family tombstone in the Great Church at Rotterdam, in which his first (*d.* 1633) and second (*d.* 1639) wives are buried.[2] From 1639 onwards, he usually wrote and signed his name as M. Harpts Tromp.

Although the Spanish navy had been shattered beyond repair at the battle of the Downs, the Dunkirkers were still full of fight, and Tromp spent most of the next six years cruising against them. His journals give us numerous echoes of the events which occurred on both sides of the Channel in those eventful years. On 13 December 1640, when lying wind-bound in Plymouth Sound, Tromp noted that a nation-wide day of prayer was being held for the recently convened Long Parliament, 'rooting-out of the Antichrist and peace of the Kingdom'.[3] Four days later he heard news of the Portuguese revolt from Spain; and in September 1641 he lent money at Falmouth to an impecunious Portuguese admiral who was on his way to Lisbon with eleven ships from Holland.[4] At the end of 1640, he captured

1 Tromp's journal for 9 March 1642, quoted by M. G. de Boer in *Tijdschrift voor Geschiedenis*, Vol. LVIII (1943), p. 128; Cf. also, *ibid. Tromp en de Duinkerkers* (Amsterdam, 1949), pp. 36–7.

2 S. P. L'Honoré Naber in *Bijdragen en Med. Hist. Gen. Utrecht*, Vol. LIII, p. 3.

3 Tromp's journal for 13 and 17 December 1640 quoted by M. G. de Boer in *Tijdschrift voor Geschiedenis*, Vol. LVIII, p. 128; cf. *ibid. Tromp en de Duinkerkers*, pp. 16, 20.

4 *Journal of M. H. Tromp, Anno 1639*, p. 214; M. de Jong, *Dom Francisco Manuel de Melo: De Strijd in het Engelsche Kanaal* (Den Helder, 1940), p. 59.

a Dunkirker near Plymouth harbour, which provoked a strong protest from the captain of the castle. 'But I gave him a ham, a piece of smoked meat and two cheeses, and then the captain went home contented.'[1]

Tromp's young sons were sometimes aboard their father's flagship during these cruises and got their baptism of fire early. But while giving his boys experience at sea, Tromp did not forget the other side of their education. An entry in his journal for 13 September 1643 reads: 'Jan Gijse is to land my son Cornelis Tromp and our cousin Jan Egberts at Havre, as I am sending them to Harfleur to live with the Protestant minister there and to learn the language.' The servant who took the boys ashore was given a new suit for the occasion; and the minister was given 59 guilders, 'so that he could have a suit of fashionable Sunday clothes made for Cornelis Tromp'.[2]

This lighter side of cruising in the English Channel does not mean that Tromp did not have more than enough to do against the Dunkirkers in 1640–6. In the years after the Downs, their ravages were so great that 150 merchants on Amsterdam 'Change protested to the States-General that they would not pay taxes for the upkeep of the army if the sea was not better guarded. Tromp, who blockaded Dunkirk closer and longer than any of his predecessors, still failed to prevent the corsairs from leaving and entering the harbour with relative frequency. He reported that the place could only be effectively blockaded if thirty sail lay permanently off the roadstead while another mobile squadron cruised in the Channel. Their High Mightinesses replied that they could not afford the expense which the maintenance of such a large fleet the year round would entail. This explains why, on New Year's Day 1641, Tromp found himself with only four ships off Dunkirk when five frigates attempted a sortie, but he was able to repulse them with the loss of one of their number. Another severe action (4 June 1641) ended in the defeat and death of Mathieu Rombout, one of the most famous of the Flemish sea-wolves, but even this loss did not halt their activity.[3]

In 1642, Tromp maintained a strict blockade with thirty-seven sail, but although he sunk or captured several corsairs, this year was one of the most profitable of the whole war to the daring Dunkirkers. Their many prizes included a very richly laden 24-gun English ship from the West Indies, and half of the Dutch Muscovy Fleet which they intercepted in the North Sea in November. But the Dunkirkers' persistence was matched by Tromp's

1 Tromp's journal for December 1640, quoted by M. G. de Boer in *Tijdschrift voor Geschiedenis*, Vol. LVIII, p. 129; *ibid. Tromp en de Duinkerkers*, pp. 16–17.

2 'dat hij Corn. Tromp een pacq Sondaechse kleeren à la mode soude laten maechen.' *Tijdschrift voor Geschiedenis*, Vol. LVIII, p. 128.

3 H. Malo, *Les Corsaires Dunkerquois*, Vol. I, pp. 365–7.

stubbornness and in 1643 his annual blockade began to bear more visible fruit. That summer, Dunkirk was reported as being a city of the dead, 'without navigation and without trade, because the Hollanders blockade it so closely that they even prevent the English colliers from coming to sell their coals which are free goods and not contraband'. But he had to break off the blockade to save the Muscovy Fleet from a repetition of the previous year's disaster, and during his absence the Dunkirkers slipped out to wreak havoc in the wine-fleet from La Rochelle.[1] It may be added that Tromp was on exceptionally good terms with Robert Rich, Earl of Warwick, Admiral of the English Fleet in the Narrow Seas, who, as an ardent Puritan, heartily disliked his countrymen's contraband trade with Papist Dunkirk. He secretly assured Tromp that he 'would be as glad to have those of Flanders by the ears as you, and I would fight as hartily with them and all the king of Spain's subjects'.[2]

In view of the losses annually suffered by the Dutch, Richelieu had little need to tell them that 'Tant que Duinkerke subsistera, l'estat de vos provinces ne sera jamais affermi, ni la condition de vos peuples bien establie. C'est l'Alger et la Tunisie du Septentrion, qui ne s'occupe qu'à escumer vos mers'.[3] The damage done by the Dunkirkers outweighed the arguments of those people in Holland who thought that the Southern Netherlands were better left in the hands of a declining Spain than given, in whole or part, to an expanding France. By a clause of the Franco-Dutch treaty of 1 March 1644, the States-General promised that their navy would blockade by sea any port in Flanders which the French army would besiege by land. Under the terms of this agreement, Gravelines and Mardyck were successively taken by the allies, and Dunkirk fell to Condé by land and Tromp by sea in October 1646. It is easy to imagine Tromp's satisfaction at the capitulation of this 'Algiers of the North' which he had now blockaded for ten successive years. Louis XIV testified his satisfaction with Tromp's co-operation in this campaign by confering on him a knighthood in the Order of St Michael and a jewel worth 24,000 florins.

The fall of Dunkirk was soon followed by peace with Spain and the end of the Thirty Years War with the signing of the Treaties of Westphalia in 1648. The States-General may perhaps be excused for feeling that there was no longer any need to maintain a strong navy in home waters. England was still distracted by the aftermath of the civil war and France by the broils of the Fronde. Only the Barbary rovers in the Mediterranean and the

1 H. Malo, *Les Corsaires Dunkerquois*, Vol. 1, pp. 368–70.

2 Cf. the correspondence between Tromp and Warwick printed in M. G. de Boer, *Tromp en de Duinkerkers*, pp. 158–66.

3 *De la nécessité de prendre Duinkerke*, pamphlet quoted by H. Malo, *Les Corsaires Dunkerquois*, pp. 400–1, cf. also, M. G. de Boer, *Tromp en de Duinkerkers*, pp. 72–106.

Portuguese in Brazil gave the Dutch government serious concern at this time, but Their High Mightinesses did not look on either of these as being great powers. Demobilization was therefore the order of the day; and this tendency was accentuated by Prince William II's abortive *coup de main* against the city of Amsterdam in the summer of 1650, which caused the Republican party that came to power after his premature death in November to be particularly jealous of the armed forces whose pro-Orangist feeling was naturally strong.

Tromp was at first regarded with a certain amount of suspicion by this republican 'Loevensteyn faction'. He was accused of having been privy to William II's attempt on Amsterdam, and of having secretly informed the Prince about the state of the city's defences. His friends urged in his defence that he had behaved himself so discreetly during the critical months of 1650 that nobody knew which side he was on. At the same time, they did not deny that he had a strong feeling of loyalty to the House of Orange, although he neither knew nor approved of the Prince's plans.[1] His third wife, Cornelia Teding van Berckhout, was an elegant young lady from a patrician family in the Hague; but Tromp himself did not come from the republican-minded burgher-oligarchy, but from the strongly Orangist seafaring community. He had received his admiral's commission from the Prince, by whom he had always been strongly supported, and he had been knighted by both the French and British kings, so there can be no doubt that he was a 'Prince's man'. But there is also no doubt that he was above all things a true patriot, and would have heartily agreed with Blake that the first duty of a sailor was 'to keep foreigners from fooling us'. This fact was soon realized by their High Mightinesses who could not, in any case, afford to disregard Tromp's great personal popularity with his seamen.[2] After some preliminary hesitation, they formally renewed his commission as lieut.-admiral and *de facto* commander-in-chief.

Tromp's only recorded activity at sea during the next three years was his presence off the Scilly Islands in April–June 1651, when he tried to obtain the restitution of prizes taken by the Royalists before Blake's reduction of the islands, in the summer.[3] But it was not long before he had more serious work to do. The States-General's expectation that the Peace of Westphalia would usher in a period of peaceful navigation in the European seas was soon disappointed. If the Dunkirkers were no longer a menace to Dutch

1 *Praatje van den ouden en nieuwen admiraal* (1653), pp. 23–5.

2 This is overwhelmingly apparent from contemporary pamphlets whose titles are listed in W. P. C. Knuttel, *Catalogus van de pamflettenverzameling berustende in de Koninklijke Bibliotheek*, Vol. II (The Hague, 1928), nos. 7413–43.

3 Cf. *The Mariner's Mirror*, Vol. XX (1934), pp. 50–66; C. D. Curtis, *Blake, General-at-Sea* (Taunton, 1934), pp. 80–5.

shipping, other corsairs speedily became so, including their quondam allies the French. Apart from French annoyance at the Dutch desertion of their alliance in 1648, and French jealousy at the amazing growth of Dutch commerce and trade, Richelieu's death and the collapse of Mazarin's authority during the Fronde fostered an enormous growth of French privateering both in the Atlantic and the Mediterranean. In addition to these French corsairs, who usually operated with pseudo-commissions from the Knights of St John, the Barbary rovers were as obstreperous as ever, while the Portuguese government scattered privateers' commissions broadcast as the easiest way of hitting the Dutch where it hurt. The resultant and increasing damage to their maritime trade forced the States-General, in May 1651, to decide on the preparation of a fleet of thirty-five warships to cruise for the protection of sea-borne commerce between the Skagerrak and the straits of Gibraltar, and on the despatch of another fleet of fifteen ships to the Mediterranean. Tromp was given command of the Mediterranean squadron, but he fell ill before he could sail for the south. His illness did not last long, but on his recovery he was faced by a far greater danger which threatened the United Provinces from nearer home.[1]

Relations between the Dutch and the English had been deteriorating for some years past, although the break when it came in May 1652 was unpremeditated. Most of the Dutch people had sympathized with the Puritans during the Civil War, but the execution of Charles I caused a wave of horror and detestation throughout all classes in the United Provinces. It was particularly denounced by the influential Calvinist clergy who were, in any case, largely Orangist.[2] Trade rivalry between merchants and sailors of the two nations from Amboina to Brazil culminated in the passage of the Navigation Act in 1651, which was intended (and resented) as a crippling blow at the Dutch carrying-trade. Another cause of mutual bitterness was the question of the flag. The English claim to the sovereignty of the Narrow Seas, with its corollary that all other vessels should strike their flags and lower their topsails on meeting English warships, had always been resented by the Dutch, and they endeavoured to avoid compliance when they could safely do so.[3]

1 G. Edmundson, *Anglo-Dutch Rivalry*, pp. 132–57; J. E. Elias, *Het voorspel van den eersten Engelschen oorlog*, pp. 36–9, 165–77.

2 G. Edmundson, *Anglo-Dutch Rivalry*, pp. 143–50.

3 The English endeavoured to exact the salute in other ports besides their own. Johan Evertsen in his journal for 21 June 1658, noted that an English captain told him in the French harbour of St Martin de Ré that 'he would rather be a slave of the Turk than let a Fleming wear his flag in his presence', although in the upshot the Englishman did not try to make good his words. On one occasion, the English even tried to make the Dutch strike their flag in their own naval base at Hellevoetsluis! Cf. the incident of 3 August 1640, described in J. E. Elias, *Het voorspel van den eersten Engelschen oorlog*, pp. 165–6.

Tromp's own attitude is clearly expounded in an entry in his journal under 30 August 1638, when an English commander came aboard him to complain that one of Tromp's captains had not only refused to strike his flag, but fired back and shot away the mast of a royal yacht. The Englishman asked 'that I should order my captains on meeting the English King's ships here in the Narrow Seas, where the King is commander, to lower their topsails, which would be enough to give contentment to His Majesty of England, since we were people of the same religion and thus brothers. I answered that we, meeting His Majesty's ships, would pay them due respect, but that it was not my business to trouble myself about his Majesty's orders. My own opinion was that nobody should presume to command at sea further than his cannon could reach, as shown by the actual example that his Majesty of Spain was entitled to command as far as Dunkirk, and at least before his own harbours, but we lay there and never so much as asked his Spanish Majesty's permission. To which I received no answer.'[1] On the eve of the outbreak of war with England, Tromp declared to the States-General that Dutch vessels which met English warships in the Channel or off the English coast usually saluted the latter by striking their flag, 'especially if the English were the strongest'.[2]

Cromwell had inherited not only Charles I's ship-money fleet but his claims to the sovereignty of the seas, and by 1652 he was in a better position to enforce them than the King had ever been. The States-General realized the seriousness of the situation somewhat tardily, but in March 1652 they decided to mobilize a fleet of 150 warships and asked Tromp for his views on their employment. In reply, Tromp submitted a memoir entitled 'Considerations concerning the present state of affairs at sea' to the deputies for naval affairs and the representatives of the five admiralty Boards. In this remarkable document, he strongly urged the government to concentrate all available ships under his command off Scheveningen, and, after detaching the convoys for the Channel and the Sound, to form as soon as possible a 'gros' or main fleet which would keep the English fleet under close observation. If war broke out, then the Dutch should immediately attack and destroy the enemy's fleet, thus ensuring that their own merchantmen would navigate securely and the Low Countries be preserved from invasion.[3]

Tromp's strategic plan of attacking and destroying the enemy's fleet

1 Tromp's journal d. 30 August 1638, quoted by M. G. de Boer in *Tijdschrift voor Geschiedenis*, Vol. LVIII, pp. 122–3; *ibid. Het proefjaar van Tromp*, pp. 65–6.

2 J. E. Elias, *Het voorspel van den eersten Engelschen oorlog*, p. 165.

3 Translated into English in *The Mariner's Mirror*, Vol. XXI (1934), pp. 452–3. Cf. also J. E. Elias, *Schetsen uit de geschiedenis van ons zeewesen*, Vol. II, pp. 25–52; J. J. L. Willinge, 'Strategische denkbeelden in den eersten Engelschen oorlog', reprinted from the *Marineblad* (1935), pp. 12–13.

before it could undertake any operation forms the key to Dutch naval strategy during their three seventeenth-century wars with England. The English on their side were equally animated by the offensive spirit, and so, as Warnsinck wrote, the North Sea became a cemetery of three-masters between 1652 and 1673. As is well known, the Dutch did not always get in the first blow, and even when they did they were not always victorious. But Tromp's basic principle of smashing the enemy's main fleet at the first opportunity remained the basis of all sound naval strategy for centuries.[1]

This is not the place to give a detailed account of Tromp's action in the Anglo-Dutch war of 1652–4, which is exceptionally fully documented.[2] The first clash off Dover in May was followed by Blake's destruction of the Dutch herring-fishery and Tromp's abortive sweep to the Shetlands, when his fleet was severely damaged by a storm. His failure to bring either Blake or Ayscue to action drew upon him the censure of the States-General, and he was temporarily replaced by Witte de With. His successor was defeated off the Kentish Knock at the beginning of October, and Tromp was then restored to favour, having never actually been deprived of his post of lieut.-admiral, as is often alleged. He won a victory over Blake off Dungeness in December, but there seems to be no foundation for the well-known story that he hoisted a broom at his masthead during his subsequent cruise in the Channel.

Tromp's command of the sea did not last long. The English were soon at sea again, eager for another round, and Tromp had to fight them with the disadvantage of having a large and unwieldy convoy of homeward-bound merchantmen to protect. The three-day battle from Portland Bill to Calais Road (March 1653), when Tromp fought one of the most masterly delaying-actions in recorded history, against two tough opponents of the calibre of Blake and Monck, showed the dogged Dutchman at his best. He was ill-supported by many of his captains in this battle, and this handicap was also the chief reason for the severe reverse which he sustained at the battle of the Gabbard in the following June. Tromp's outstanding gifts as a seaman and tactician were clearly shown in the last days of his life, when he effected a junction between the two divisions of his fleet from the Maas and the Texel in the face of Monck's superior force off Ter Heide.[3] The ensuing battle had barely begun when Tromp fell dead with an English bullet in his heart, his last words being: 'I am finished; keep up your courage.' The fiercely fought action ended with Witte de With's retreat to the Texel,

1 J. C. M. Warnsinck, *Twaalf doorluchtige zeehelden* (Amsterdam, 1941), p. 33.

2 In the Navy Records Series of *Letters and papers*, in J. E. Elias's *Schetsen* in 6 volumes, and n C. Ballhausen *Der erste Englisch-Holländische Seekrieg* (Berlin, 1923), to mention only the chief sources.

3 J. C. M. Warnsinck, *Twaalf doorluchtige zeehelden*, pp. 56–9.

but the English had suffered so severely that they were compelled temporarily to raise the blockade.

Tromp's death created a tremendous impression on both friend and foe. His countrymen gave him an impressive state-funeral and interred him in a sumptuous marble tomb at Delft, mourning his end in a spate of poems and pamphlets. His loss was admitted to be irreparable. An English spy reported that 'Johan Evertsen and De Ruyter should have said if they should cast twenty Johan Evertsens and twenty Ruyters into one they could not make one Tromp, and to make him alive again they would yet once more fight the last fight'.[1] Nor was the enemy's tribute less impressive, although it was not rendered immediately.

Tromp had been regarded as a great admiral in England ever since the battle of the Downs; but some of the English comments on his conduct in the war of 1652–3 sounded a slightly sour note. Writing from England just before Tromp's last battle, a Dutch spy reported 'Tromp, they say here, is a fine soldier; but he and all his men . . . are always drunk when they fight; and as long as the brandy and wine is in their noddles, so long the business goes well on their side; but when that is evaporated, then their courage fails them'.[2] After the war was over, the English could take a juster view of their great opponent, and his reputation among them increased with the years. James, Duke of York, a man whose opinion in such matters is deserving of respect, told Samuel Pepys that in his opinion Tromp was 'the greatest seaman that ever was in the world for governing of a military fleet', and excelled only in later years by his pupil, Michael Adrianszoon de Ruyter.[3]

But if it was true that de Ruyter became in his time a greater strategist and tactician than Tromp, even he never quite achieved Tromp's popularity with his men. Both had simple and pious natures—although they were both strict disciplinarians—and their frugality was remarked by their contemporaries in general and by the English in particular.[4] Peter White tells

1 *Letters and papers*, Vol. v, p. 403.

2 *State papers of John Thurloe*, Vol. 1 (London, 1742), pp. 330–1. 'An intercepted letter designed for Holland. Translated out of the Dutch.' 1/11 July 1653.

3 *The Tangier papers of Samuel Pepys*, (N.R.S. edition), p. 314.

4 'I was shown at Rotterdam', wrote James Monson during his tour of the Netherlands in 1685, 'the greatest and richest sea commander they have, who could not be known from the lowest captain of a ship, either by his habit or attendance; which agrees very well with what is recorded of Admiral de Ruyter, who had the reputation among all nations of being the greatest seaman of his time, and was accordingly valued and rewarded at home; yet was he rarely seen in a coach nor better clothed or attended than the meanest captain of a ship, his house and table like that of other merchants and shopkeepers where he lived.' The present Lord Monson kindly allowed me to quote these passages from his ancestor's unpublished journal, which may be compared with what Sir William Temple wrote of De Ruyter and Jan de Witt in his *Observations upon the United Provinces of the Netherlands* (p. 128 of the 1676 edition).

us how Tromp 'would not be entreated to fool away his time in feasting', and how he was satisfied with a pickled herring for his breakfast. A contemporary Dutch pamphleteer contrasts Tromp's habit of sleeping in his underclothes with his successor's custom of changing his shirt daily and his sheets twice a week.[1] But Tromp was the idol of his men for better reasons that these.

He did not address his crews in the abusive terms which were so common in those days, but he was exceptionally kindly and considerate towards them. He was described as being 'not terrifying or rough, like the children of Neptune usually become from the boisterousness of the sea', but as civil and courteous to all. Small wonder that his men 'thought it a great honour to fight under him against the enemy; and even if they lost an arm or a leg in action, they boasted that they had lost their limb in the ship and in the service of Admiral Tromp'.[2] The chivalrous side of his nature is shown by such incidents as his supplying Oquendo with masts and spars before the battle of the Downs, and by the sorrow which he expressed at the death of the gallant Don Lope de Hoces.[3] As a pilot and professional seaman he was second to none; but it is perhaps because of the qualities typified by the affectionate nickname of 'Bestevaer' that he holds the place which he does among the great admirals of Holland's golden century.[4]

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1 *Praatje van den ouden en nieuwen admiraal*, pp. 4–5. Tromp's successor was Baron Jacob Van Wassenaar van Obdam.

2 *Praatje van den ouden en nieuwen admiraal*, p. 23.

3 *Journal of M. H. Tromp, Anno 1639*, pp. 56, 63.

4 I have to thank Mr W. Voorbeijtel-Cannenburg and the Director of the Nederlandsch Historisch Scheepvaart Museum at Amsterdam for their kindness in sending me several Dutch books which I could not obtain in London.

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THE BUILDING OF THE *GRACEDIEU*, *VALENTINE* AND *FALCONER* AT SOUTHAMPTON, 1416–1420

By Mrs W. J. Carpenter Turner

IT has long been realized that the reign of Henry V formed a period of much interest in naval history, and that during the short time that he was King a comparatively large number of vessels of all kinds were added to the Royal Navy, by capture, purchase or by actual construction. This interesting but premature increase in numbers appears also to have been accompanied by the tendency to increase tunnage, though a complete and successful explanation of medieval tunnage figures in modern terms has not yet really been made. However, medieval ships were assessed in tuns (*dolium* or *doleum*), and all available accounts seem to make it clear that before the reign of Charles I the largest vessel built for the Royal Navy in England was the *Gracedieu* of Henry V. At the time when Oppenheim wrote he had found at the Public Record Office some of the naval accounts of William Soper, Clerk and Keeper of Ships to Henry V. Two of these gave conflicting accounts of the *Gracedieu's* tunnage. One[1] lists her as of 'Portage cccc dol' per estimat''—i.e. 400 tuns—the other[2] as 'M[l] cccc dol''—i.e. 1400 tuns, a much more likely estimate in view of the continued reference to the *Gracedieu* as the great ship. Since Oppenheim wrote, a detailed volume of Soper's accounts has come from the Phillips collection of manuscripts to the library of the Greenwich National Maritime Museum.[3] This gives her tunnage as 1400 tuns—'in ead' nau' R' voc' Gracedieu portag' M[l] iiij[c] dol''[4]. Thus the tunnage in the first of the two P.R.O. accounts mentioned above may reasonably be described as a clerk's error. That the *Gracedieu* was undoubtedly a ship of about 1400 tons was, moreover, made clear by what may be called the naval archaeological expedition in 1933, and the researches of Dr R. C. Anderson, Captain F. C. Prideaux Naish, M.B.E., and Lieut. M. N. Pyrnne, R.E., in, on, and under the partly submerged wreck of the ship, which they showed still lay on the mud of the Hamble River. She is still visible to-day (1953) at extreme low tides. Any theory

1 Exchequer L.T.R. Foreign Accounts, E 364/69. 2 E 364/65.
3 Consulted by kind permission of the Trustees of the Greenwich National Maritime Museum.
4 G.N.M.M. MSS., p. 23, para. 3. (Under main heading, wages, mariners and keepers of the said ship.)

that the Hamble wreck might be that of a Viking ship was further disproved by a note in the Hampshire Field Club *Proceedings*, published in 1951, in which Mr A. W. G. Lowther showed from the evidence of dendrochronology that he assigned an early fifteenth-century date to the two pieces of timber submitted to him. These timbers have been for many years in the Westgate Museum at Winchester.[1]

Many features of this monster have already been described,[2] but it is thought that a study of the accounts of Robert Berd, her Clerk of Works, might provide some useful material for the naval historian. These accounts are still preserved amongst the records of the Exchequer at the Public Record Office.[3] There is a local tradition that the ships of Henry V were built at Elyng, near Southampton, but Berd's assignment was for the making of a new ship 'apud villam Suthampton', a phrase which constantly re-occurs in both his and Soper's accounts, and which would seem to imply a position actually in or very near the harbour of the medieval town. Moreover, both Berd and Soper were careful to state exactly where their work was done if it was not actually at Southampton, for example at Hamble.

It is not the purpose of this article to consider the various problems of naval administration raised by the appointment of Berd as Clerk of Works for one particular ship, nor to indicate his relationship with Soper. There is a great deal of evidence to suggest that it was William Soper, a Southampton draper, who took the greatest responsibility for naval affairs during the reign of Henry V, and indeed until 1442. The first of Henry V's Clerks of the Navy appears to have been Lovenay who remained in office only a few months and who has left behind as his 'account' a pitiful few lines which give very little information indeed.[4] On 18 July 1413, William Catton became Clerk of the King's Ships and within a week was commissioned to take raw materials and mariners and workmen of all kinds.[5] On 8 February 1414 Soper was commissioned to take carpenters and other workmen, as well as materials 'for the making and amending of a great ship of Spain at Southampton'.[6] This ship, better known by her English name, the *Holy Ghost*, was finished by about 9 January 1416 when her master, Jordan Brownyng, was commissioned to man her.[7] In the following July, Soper with five other men, including a carpenter, John Hogekyn, was commissioned to make a great ship with a balinger, and this may have been the *Jesus*,[8]

1 H.F.C. *Proceedings*, Vol. XVII, part 2, p. 130.
2 *The Royal Engineer's Journal*, Vol. LII, June 1938, p. 273 *et seq.*; *The Mariner's Mirror*, Vol. XXV, January 1938, pp. 112–14.
3 P.R.O., E 364/57.
4 P.R.O., E 101/44/23.
5 *Calendar of Patent Rolls*, Vol. I, Henry V, p. 114.
6 *C.P.R.*, Vol. I, Henry V, p. 178.
7 *Ibid.* p. 412.
8 *Ibid.* Vol. II, p. 38.

but it is more likely to have been the *Gracedieu*. Berd's appointment to survey the works of a great ship at Southampton was dated 11 December 1416.[1] In April 1416 Soper had been given a pension of 20 marks a year from the customs in the port of Southampton, presumably as a reward for his work on the *Holy Ghost*. Two years after, on 6 July 1418, his appointment was confirmed as surveyor of the King's ships at a salary of twelve pence a day.[2] On 3 February 1420, he was made Keeper and Governor of the King's ships at a stipend of £40 a year, including that of his Clerk.[3] This is not the place to describe his future career nor his relationship with Nicholas Banastre, but it will thus be seen that the naval activity of Henry V's reign was directed by a group of three men, Catton as Clerk (until February 1420), Berd as Clerk of Works for the *Gracedieu* and her retinue, and Soper, who had some responsibility for almost every aspect of English naval activity until he was superseded in 1442 by Richard Clyvedon.[4] There would appear to be at least one other example of the appointment of Clerk of Works for a particular ship. Thomas Barton was Clerk of Works when the *Thomas de la Tour* was remade at Deptford Strand, a job for which David Savage, Soper's own servant, also took some responsibility.[5] Soper's accounts for the regnal years 7–10 Henry V form a complement to Berd's financial statements.[5] It seems likely that Berd's appointment was made for two reasons, to control efficiently the work on the great ship, and at the same time to free Soper for the many other naval problems with which he was dealing, not only in Southampton but in other parts of England. When Berd was working on the *Gracedieu*, Soper was constructing a naval store-house and smithy at Southampton and building two store-houses at Hamble, a port which he fortified with a wooden 'Bulwark' and a spiked wooden defence pale. The store-house was near God's House (Domus Dei) and may have been that building referred to in later Southampton documents as the 'long house'. Soper sold it in 1423 to Walter Belle, master of God's House, for £66. 13*s*. 4*d*.[6] He was also possibly making, and certainly refitting, the *Jesus*, building a great boat for the *Trinity Royal*, a balinger called '*Ane*', and reconstructing out of the *St Clare* of Spain a great new ship the *Holy Ghost of the Tower*, with an accompanying balinger and boat.[7] He was not allowed to keep all the equipment of the *St Clare*, and an order of 4 November 1414 required him to return certain articles to her Spanish master, including the ship's dog.

1 *C.P.R.*, Vol. II, Henry V, p. 84. 2 *Ibid.* p. 169. 3 *Ibid.* p. 256.

4 Soper was a very wealthy man indeed. See his will, *Black Book* (Southampton Record Society). He was a shipowner himself and owned the *Julyan* of Hampton (140 tons). (P.R.O., E 101/49/25.)

5 E 364/61. 6 E 364/65.

7 P.R.O., E 364/61. This *Holy Ghost* was not the *Holy Ghost of Spain*, a smaller royal vessel.

The accounts which Berd presented to the Exchequer on or soon after 8 July 1423 make fascinating reading, and throw an interesting light on the expedients of naval finance in the early fifteenth century, and the materials used in the construction of a medieval man-of-war. With the *Gracedieu* Berd built her 'retinue' of two balingers, two boats, and three 'Cok-boats', and it is unfortunate that his accounts list materials used for the entire work and make it difficult to distinguish the proportions used for each individual vessel. Quantities given therefore refer to materials used for the *Gracedieu* and/or for one of her accompanying retinue. Nevertheless, Berd's account, which covers the period 31 October, 4 Henry V, to 6 December, 8 Henry V (i.e. 1416–20) is of great importance to the naval historian, and if the accounts presented by Soper for the latter part of this period are also consulted a reasonably clear picture emerges of the work done on the great ship, and the activities of the men who made and manned her.[1]

I. *Preliminary work on the great ship*

The ship was laid down before Berd became her Clerk of Works.[2] Soper supervised the making of the 'dok' in which she was built, and of a great hedge or enclosure made of spines and stakes 'around the place where the ship was begun...for the safety of the timber and other necessary things lying thereabout'. He purchased the first essential supplies of raw materials, timber, board called 'Weldyssbord' and 'Englishbord', different sorts of iron nails, pitch, bitumen, and moss. His working foreman was John Hoggekyn (or Hogekyn) who worked with three other carpenters, or quartermaster-shipwrights as he called them, at eight pence a day. As his other payments were to carpenters and sawyers (6*d.* a day), clenchers (5*d.*) and 'holders' and labourers (4*d.*), and as his total expenditure on the *Gracedieu* at this stage was a mere £289. 0*s.* 2*d.*, it is obvious that very little progress had been made before Berd took over. It seems likely that the ship was built on a low-lying strip of land with a temporary wall on the sea side of the dock. She would thus have to be launched at a high tide after the wall had been removed. This would seem to imply that her draught was not greater than the difference between high and low tide.

II. *The provision of money and materials for the 'Gracedieu'*

(*a*) *Exchequer and Chamber grants.*

Berd's accounts answer one very important question. In her financial aspect, the *Gracedieu* was the product of grants from the Exchequer and the King's Chamber, and private gifts, confiscations and the profits of

1 P.R.O., E 364/61 (Soper); E 364/57 (Berd).

2 An additional reason for thinking that the order of July 1416 does not refer to the *Jesus*.

war. By far the greater part of the money needed was provided by the Royal Exchequer, and students of Henry V's impoverished finances will not expect to find anything else but an instalment system. Berd accounted for his Exchequer grants section by section over the entire period of years. Some grants were made to him for the payment of wages, and other expenses, which he had incurred himself. Others were for the 'prouisors' of stores, and were made to Berd on behalf of these men. He was certainly paid as the work proceeded, and his entire grant from the Exchequer came to £3549. 10*s.* 10*d.* This amount was made up as follows

In 5 Henry V (1416–17) he received a first grant of £266. 13*s.* 0*d.* 'for making the great ship' of which £100 'was given into his own hands' at Westminster on 3 August, 5 Henry V; on 20 September he was given £166. 13*s.* 0*d.* at Southampton, of which £66. 13*s.* 4*d.* was 'pro John Exham'. Later on in the same year there were two payments, totalling £633. 6*s.* 8*d.*, a direct grant to Berd of £133. 6*s.* 8*d.* on 21 October (it is not stated where) and on 20 February, £600, apparently by tally at the Exchequer. In 6 Henry V the Exchequer made many grants, £66. 13*s.* 4*d.* (6 May at Southampton pro Robert Welton), £100 (14 May, direct to Berd), £100 (16 July, pro William Kynwolmmersh, then Keeper of the Treasury), £200 (27 September, pro Nicholas Banastre at Southampton), £100 (10 October, again pro William Kynwolmmersh), and on 3 December £70 in bonds, £100 in cash and £51. 3*s.* 4*d.* for Soper 'super fretag' diusorum malorum'. This regnal year closed with a grant direct to Berd on 24 February of £133. 6*s.* 8*d.* and a further sum of £100 pro Nicholas Banastre on 11 March. In the next year (7 Henry V) Berd accounted for £489. 12*s.* 10*d.* made up of several 'parcels'. On 13 May he received £141. 5*s.* 8*d.* pro William Mowford,[1] a week after £110 pro R. Welton of Southampton, on 8 July £100 direct, on 25 August £66. 13*s.* 4*d.* pro William Kynwolmmersh, and the day afterwards £71. 13*s.* 11*d.* for the Duke of Bedford. There is nothing to indicate from the financial statements that work slacked off during the winter months, though there is evidence elsewhere that the building of the *Gracedieu* was held up when men who had been arrested and forced to work on her fled back to their native West Country. Thus in the winter of 7 Henry V Berd received £80 on 13 November, £40 on 5 December for Nicholas White, servant of Nicholas Banastre and £100 direct on 20 January. The last Exchequer grants for this year were made at the end of February, £76. 13*s.* 4*d.* for Nicholas Banastre and £100 for Soper. In the next year grants were made on several occasions, sums of £154 and £40 direct to Berd (9 May and 8 November), £120 (12 July), £65. 16*s.* 6*d.* (6 November) pro William Mowford of Bridport and on

1 Or Monforde: see below, p. 60.

18 November £80 assessed on the goods and chattels of Robert Derecroft. On 17 July, 9 Henry V Berd got a further £9. 1*s*. 8*d*. pro Nicholas Banastre and on 6 October in the same year £240. 12*s*. 1*d*. for John Reynwell for sixteen great masts and other necessities bought by him. By 10 Henry V the *Gracedieu* was nearly finished and Berd had only to account for small Exchequer grants: £4. 9*s*. 11*d*. pro Walter Dalman, (28 May), 50*s*. (John Tyer), £22. 8*s*. 7*d*. (Soper, 15 July) and 63*s*. 4*d*. (Richard Rowe, 30 August).

So much for 'official' finance, a list which makes rather dull reading, but which is only a proportion of the total monies obtained by Berd for his great work. The King provided £1000 direct, in six separate grants, of £200 (8 December, 4 Henry V, presumably at Westminster), £200 (9 March, 4 Henry V, at Westminster?), £100 (9 April, 5 Henry V, Mortlake), £200 (16 May, 5 Henry V, Reading), £200 (21 June, 5 Henry V, Titchfield) and £100 (24 July, Portchester). Thus Berd obtained a total of £4549. 10*s*. 0*d*. direct from the Exchequer and the King. Exchequer payments to Berd, Catton and Soper may be checked in the series of financial records known as Issue Rolls. It is of some interest that early mentions of the *Gracedieu* in these refer to her by her English name, the *Godegrace*.[1] Hardly any of the original agreements for the buying of supplies have survived. An exception is that made between William Monforde of Bridport and Soper and Berd ('surveyors of the great ship called *Gracedieu*') for the supply by Monforde of fifty cables.[2]

(*b*) *Sale of surplus stores*

This was not the whole extent of Berd's resources, and a fascinating section of the account deals with the money he obtained from the sale of surplus stores and includes many interesting payments and gifts in kind. This section makes it possible to emphasize that the Council's decision to auction the royal navy on the death of Henry V in 1422 was not a new way of raising money. The sale of surplus stores and even surplus ships had long been an established part of naval administration, and likewise the custom of hiring out royal ships to private merchants.[3] It also shows that knowledge of the building of the great ship must have been widely spread over southern England amongst all classes of the community. Stores were sold as soon as they apparently became surplus and probably without regard for the necessity of their re-provision in the future. During the first few months of Berd's work there was no store-house at Southampton, and it is probable that at first the cost of erecting one and maintaining it, together with the urgent need for ready money, made him willing to sell off stores whenever

1 E.g. P.R.O., E403/630.

2 *Ancient Deeds*, Vol. III, C. 3128.

3 Cf. P.R.O., E101/44/24 (Catton's account).

he appeared to have more in hand than was needed for the immediate job. One of Soper's tasks was to provide a store-house at Southampton with a smithy or 'forgehouse' adjoining it. This store, 126 ft. long, was of New Forest timber, with a tiled roof, and made between 18 March, 7 Henry V, and 14 November, 7 Henry V. Two of Soper's 'prouisors', William Bachen and John Hele, had found it difficult to get men to make this building, and only obtained the necessary labour by searching all over the county of Hampshire. Eventually the work was completed under the general supervision of a master carpenter, Robert Hitchcoke.

More particularly, Berd re-sold damaged material, including timber which did not come up to the required standard. He also had to account for objects and materials handed over to him which were not suitable or necessary for his work, most of which he appears to have disposed of quite successfully. All these sales are listed separately, and are naturally described as being 'at the King's command'. Thus in June, July, August and September, 5 Henry V, Berd sold 13 tuns, 1 quarter, 10 lb. of iron for £66. 8*s*. 2*d*. to various smiths in the Southampton neighbourhood, Peter Dokham, John Hogge, William Kent, John Greffrey, John Ferant, John Notebeme and Richard Burgeys. On 25 August, 8 Henry V, Thomas Armer', John Marschall, William Payn' 'and others of Southampton' bought 25 tuns, 101 quarters for £125. 6*s*. 10*d*. A further quantity of iron, surplus or scrap, was sold on 8 November, 8 Henry V, for £20. 6*s*. 8*d*.

Part of his timber stores included wood for the mending of ships damaged in the King's Norman voyages. From this supply John Wylkyn and Thomas Robynson, both from the distant county of Norfolk, bought three pieces of oak at the apparently moderate cost of 42*s*. 4*d*. Next in Berd's list of sales of surplus goods we find the sale of a ship or part of it. This time the purchaser, Nicholas Atte Wodede Shales, came from Northumberland, and a rather pathetic story lies embodied in Berd's account. The ship was the Sandwich *Cog John*, owned by a Sandwich man, Thomas Atte Fama, and it has been 'pressed' for the King's service, but the owner had been retained 'as a servant of the late King' with his ship and ordered to carry timber for the French War from Winchelsea to Rouen. The cargo was actually discharged at Harfleur, except for two of the best pieces which Thomas hid in the Cog under some ballast. He returned to Winchelsea but his theft was discovered and he became a fugitive from justice. The *John* became '*Cog John* of the King' and on 1 March, 9 Henry V, it was sold to Nicholas Atte Shales for £20 and 'the money used for the King's work'.

In the same year, on 9 November, Berd sold a small amount of scrap iron for £4 to Robert Smyth of Southampton—chiefly nails and other small pieces of iron broken during the 'clenchyng' of the ship and of no

further use except to be melted down. When the *Gracedieu* was nearly finished he sold a pair of rollers which had been used for carrying materials, for the small sum of 20*s.* paid by James Genhen. Twelve rolls of 'bever' were sold to Thomas Armer' of Southampton for £12.

An interesting sale is that of small amounts of surplus timber which, for some reason or other, had been forfeited to the King and were probably sold where they stood or lay in the New Forest. This produced £12. 11*s.* 8*d.* and the wood appears to have been mostly small stuff, sold on the advice of William Soper and Nicholas Banastre. William Seman paid 60*s.* for the 'cropp' in his bailley called 'le Northbaylle', Richard Claymond, forester, of the 'Inbaylle with part of Lyndhurst' paid the much larger sum of £7. 5*s.* 0*d.* In the 'Estbaylly' William Terant and John Derly bought 40*s.* worth of wood, and in the Bailley of Fritham Richard Parker paid 6*s.* 8*d.*, apparently for trimmings from 142 oaks. Sixteen fallen oaks in another Bailley could not be sold 'because of the defect of the buyers without indenture'. In Deynham Park Robert Wodley, the 'parker' there, bought five pieces of fallen timber at a shilling a piece. It was so broken that it was useless for the King's work.

The *Gracedieu* had been built in a temporary enclosure and after she was launched the site was partially cleared. Thomas Armer' of Southampton bought 'divers shores, piles and stakes of wood remaining in the place where the ship was made and sold at royal command'. Oddments of all kinds, ropes, cords, masts 'and other necessary gear for the work of the great ship' to the value of £47. 11*s.* 1*d.* had also been sold by Berd, but he was unable to obtain payment for them before he presented his accounts. These 'certain men' therefore appear with the marginal heading of 'Creditores'. In all, just over £300 was obtained from small sales, including those not paid up in 1418. The sum total of Berd's receipts is put down as £48 52. 2*s.* 7*d.*

(*c*) *Gifts in kind for the King's work, including timber from the royal forests*

A considerable proportion of the materials used for the great ship came as gifts in kind, and these Robert Berd put down separately. His list begins with the imposing gift of 120 oaks received from the Abbots of Netley, Titchfield and Beaulieu and the Priors of Southwick and Hayling. As we know that 'prouisors', including Soper himself, were out searching the countryside for suitable material, this may have been as much requisition as gift, and the provision of enough seasoned oak may well have been a problem.[1] The greater part of the timber came naturally enough from the nearest royal forest. 2603 oaks, 1165 beeches and seven broken oaks were

1 Mr Lowther (p. 56, note 1) considered that one of the timbers from the *Gracedieu* might have been felled *c.* 1350.

provided by Thomas, Earl of Salisbury, Keeper of the New Forest, through Thomas Ryngewood and William Drewe, verderers. The use of a large amount of beech probably helps to explain some of the defects of the *Gracedieu*. It is a poor wood, and even when painted, easily subject to worm. Odiham Park provided twelve fallen oaks, presumably seasoned wood, sent to Berd by Robert Wodley, 'parker' there.

Berd also accepted a certain amount of ready-made naval gear and necessary stores; two anchors as a gift from John Hawley of Dartmouth, nearly 6 tons of iron from another Dartmouth man, William Glouer (per John William of Dartmouth),[1] and a quantity of miscellanea taken at sea by Admiral Sir William Clifford and passed on to Berd through John William, master of the *Jesus of Smalheth*, on or about 1 April, 5 Henry V.[2] This again included nearly 6 tons of iron, but the greater part was naval gear: fourteen masts, two missens, two great pulleys and four guns, three of which were either incomplete—'sine Camera', or in a very primitive form.

In the same year two royal balingers, the *Ane* (master, Randolph Huskard) and the *Cracker* (alias *Alice of the Tower*, master Richard Love) with another balinger belonging to John Elyngham of London, had captured two ships, the *Seint Jake* (master, Peter Billebowe) and the *Seynt Marie* (master, Yvege de Yvane), and from these prizes got nearly 79 tons of iron and 162 pokes of wool. Ten days later the cargo of another prize, the *Christopher Spayn*, was handed over by Thomas, Lord Carew. This was a miscellaneous collection, nearly 86 tons of iron, 321 pokes of wool, five bales of cinnamon, seventeen rolls of Bever, and three hides of cattle. Berd passed on the ship to Catton, for he refers to an indenture about it made between them on 24 August, 5 Henry V. Twelve of the seventeen rolls of Bever he sold to Thomas Armer' of Southampton for £12, and a London mercer bought all the wool from the *Christopher*.[3]

Old or broken-up royal ships also provided gear. Catton sent Berd five anchors, one mast, two missens and a bowsprit which had come from an old royal Carrack, the *Agase*, which this account reveals had been broken up 'near the wall of Southampton'.[4] The *Marie Knight* had been broken up under Soper's supervision at Hamble, and she provided one mast as did the old balinger, the *James*. Soper was also responsible for finding some of the

1 A John William was master of the King's ship, *Jesus*.

2 This description of the *Jesus*, with a master, John William, was apparently taken by Oppenheim to imply that this was the royal *Jesus* and that she had been built or at least refitted at Smalheth, but it is not certain from Soper's account of the *Jesus* whether the *Jesus* of Smalheth is really the *Jesus of the Tower*.

3 The *Christopher* was a prize of 600 tons taken in 1417.

4 Presumably this means on the south or west side of the wall of the medieval town.

tackle and cordage, though it is not clear where all this came from. Thus on 22 March, 8 Henry V, he handed over ten Hawsers, of which 'two are called upties, two Boltropes, 3 steyes, 1 Bowelyn and 2 longhawsers and cables', One further mast came from a balinger belonging to the Duke of Bedford. The list of equipment which Berd received and for which he made no payment concludes with a miscellanea, the greater part of which came by royal command from William Howelyn, master smith of the King. It includes the essential pumps which must have been in continuous use, and is as follows:

6 great anchors
7 small anchors
78 pulleys
2 pumps
8 buoys
1 lathe 'ordered for boards'
9 great hammers (hamours)
8 pairs of tongs of divers sorts
1 'firestaffe'
1 whistle (Weshell)
7 'peykeys'
8 great clenching hammers
12 great augers of which two are long augers
2 pump boxes
1 iron shoe for the pump staff
1 hanis of iron for drawing timber
2 measures of iron (gaddes de ferr')
2 'cap' of iron, for the 'roster' (i.e. for the prow?)
1 iron gear for hanging the anchors whilst they were being made
1 iron fork
182 and 2 'gadd' of iron[1]
2 bowsprits
1 missen
4 sail-yards
87 picks and mattocks
1 great mast
6 sails
11 bonnetts

So much for the money which Berd received for the cost of making the *Gracedieu*, and for the gear and raw materials given him in kind.

III. *Berd's purchases and expenditure*

(*a*) *Wages*

The opening paragraphs of the account enable us to get a clear idea of what exactly the money was spent on, and there emerges a complete picture, not only of the materials used in the making of the great ship in the early fifteenth century, but also the many different kinds of labourers working on her, with the names of the foremen in charge of the different groups. Some at least of these men, thus occupied, can be found working on other royal ships, and further research would probably reveal the existence of a considerable number of skilled shipbuilders, though the rapid expansion of the Royal Navy at this time undoubtedly necessitated the employment of a great deal of unskilled and unwilling labour.

The preamble to the account makes it clear that Berd was responsible for every aspect of work on the great ship. He accounted for his own salary, for all port dues and all wages, of carpenters, smiths, carpenters called

1 Listed separately.

'Berders', clenchers, holders, workers called 'Joynours', caulkers, mariners and the additional labour employed in 'launchyng, rygging and takelyng and the raising of the great mast'. The weekly wage bill for this expensive enterprise was high. Berd himself received 12*d.* a day and calculated that he worked from 6 December, 4 Henry V, to 16 December, 8 Henry V, with only ten days off. This, of course, does not imply that the work went on continuously: Sundays and holidays must have been observed. Most of the men received more than the legal statutory wage and the expression 'Statute of Labourers not withstanding' occurs constantly. If we can relate skill to money received, after Berd himself the most experienced workers were the master joiners paid at the same rate as Berd, then the master carpenters, then the carpenters called berders and the caulkers who were paid 8*d.* a day. Other carpenters and berders received 6*d.*, the rate paid to some clenchers and to some smiths. There was a lower-paid group of smiths who got 5*d.* a day; holders only got 4*d.* or 3*d.* Joiners who were not master joiners received 6*d.* a day as did 'Cementers' (masons or perhaps plasterers) and master-mariners making sails.[1] Other sailors making sails were paid at a 4*d.* rate. Berd also accounted for the wages and expenses of John Hekley, 'prouisor', and other un-named 'prouisors' who were sent to different parts of England to buy necessities for the great ship. John Hoggekyn was the master carpenter of the *Gracedieu* and had to supervise the nineteen carpenters called Berders who worked under John Stevens at 6*d.* a day and the twenty-seven other carpenters called clenchers working under John Caghill at 5*d.* a day. We know that Hoggekyn wore himself out in the King's service, for on 1 June 1421 he was granted a pension of 4*d.* a day because 'in labouring long about the King's ships he is much shaken and deteriorated in body'. Another group of carpenters paid at the inferior rate of 4*d.* a day and called 'holders' were employed under Berd's supervision for 15 days in July, 5 Henry V, on preparing carracks, ships and balingers at Southampton in readiness for the King's voyage to Normandy.

A large proportion of the men who worked for Soper and Berd appear to have come from the West Country. A small undated document preserved amongst the Chancery Miscellanea of the Public Record Office and certainly relating to work on either the *Holy Ghost* or the *Gracedieu*, provides a list of seven Bristol men, eleven Cornish men and twenty-three Devonshire men who had to be arrested and thrown into prison 'because they did not obey the command of our Lord the King for the making of his great ship at Southampton'.[2] On 14 December 1418 Soper was commanded to arrest

1 'Cementors' perhaps worked on the dock.
2 C.47/Bundle 2, No. 49, no. 14.

a number of sailors and a few carpenters 'who had been taken to serve the King in their artifices but departed without leave after receiving their wages'.

(*b*) *Materials bought*

Between 6 December, 4 Henry V, and 6 December, 8 Henry V, Berd bought many different kinds of stores and equipment, and most of the items of expenditure are carefully listed twice. Berd's Latin, or rather of the Clerk who enrolled his accounts, was sorely tested by the need to translate so many technical terms which had hardly ever before concerned the Exchequer. Thus a good many necessities were described in English words with the bare minimum of Latinized endings. It is perhaps best to give his list of purchased goods in English, but the contemporary term is also given where its translation into modern English is at all doubtful.

Articles bought for making and completing the great ship called *Gracedieu*, and two balingers and three Cock-boats belonging to the same great ship, between 6 December, 4 Henry V, and 6 December, 8 Henry V.

Divers boards called shipboard and English-boards
Saw-boards
Lead nails
'Crossegymewes'
Round nails of iron
'Ciser'
Oil
Wax
Moss and Okam
9 tons, 987 lb. of iron
8 sounding leads
17 tons, 1403 quarters, 24 lb. 'Roof et Nayll' called clenching irons
72 measures (gadd) 'Stele' for 9 hammers
1 'Bedewe'[1]
12 pieces of oak
7 pieces of broken oak
12 elms
1 hammer[2]
13 lasts, 10 barrels pitch
14 lasts, 11 barrels bitumen
7601 quarters, 9 lb. resin
3 pieces herth pitch
2650 wainscot boards
332 rygall[3]
224 deal boards (deles)
225 oars
147 chalders, 1 quarter, 5 lbs. sea coal
118 forks and spades
28 augers
153 baskets and little baskets (or scoops and little scoops; may be water-scoops)
28 wheel-barrows
5 pairs of rollers and one single roller
3 cart-boards
26 masts
2 bowsprits
97 rolls of 'v'llon' (? sail-cloth)
1026¾ yards of canvas
106 pieces 'Wynkwes'
52 lb. thread called pak thread
121 lb. Merlynglyne
126 runs (ronneys) pak thread
35 lb. of thread (filase)
20 yards of worsted, red and white
265 (? bows)
148 cords and lines
175 hawsers
38 cables
5 casts or pulleys
2 pumps
8 'shanes', of brass
4 'pixid' (i.e. covers or boxes?)

1 Cf elsewhere in E 364/65, 'j Ferr voc Bedewe' and 'j Bedewe voc Hamour'.
2 Cf. E 364/65, 'j Mal' ferr' voc' hamo*ur*'.
3 Cf. E 364/65, where 'Rygold' is prepared board, i.e. boards planed, sawed and worked. Might be hard wood.

52 chains from 1000 lb. copper
200 lb. bell brass
900 lb. pot brass
29 'rybbys'
3 'susterys' (Stays?)
6 pairs 'vacuis'
4 'catabi' (kettles for boiling pitch)[1]
1 saw[2]
3 pairs great bellows
2 'sere'
100 lb. gun-powder
8 dozen corks
1 boat (for use on the work)
8 empty tins
1 brass pan
1 anchor
2 iron crowes
23 iron wedges
3 iron betells
121 picks and mattocks
3 augers for miners
23 iron spades and shovels

(c) Berd's account of his disposal of stores which he did not sell or use on the ships

To the long list of materials used on the King's work and to the list of his sales in ready cash must be added those materials of various kinds for which Berd had to account, but which he did not actually sell. A large quantity of surplus iron went to Nicholas Merbury, master of the King's ordnance, and to master William Smith of the Tower of London and to John Matthewe, smith of the King in London, for the making of necessary ordnance for the voyage of the King. Some naval fortifications had been started at Portsmouth, and further quantities of iron were handed over to the supervisor of works there, Robert Rodyngton, who died before his work was completed, and his successor John Chamberleyn. Soper took over nearly 22 tons of iron and in addition five of the bales of cinnamon, three rolls of Bever and three salted hides, which Berd had been given from the cargo of the *Christopher Spayn*. A number of miners from various parts of England, including the Peak district, were needed for the King's work in Normandy,[3] and in July 1417 Berd handed over to Sir John Pauncefot, one of the 'masters of minours' for his voyage to 'Conque', two crowes, twenty-three 'wegges', three betells and one auger. A second master, Sir Philip Leche, was given 147 picks and matoks, two augers and twenty-three forks and shovels. This suggests that any further excavation necessary for the making of the dock was over, or it may more likely imply that a large proportion of the iron sent to Berd was not intended for ship-building but was given to him simply because it was convenient to have it made into implements of all kinds at the Southampton naval forge-house. Berd's work on the *Gracedieu* and her retinue officially came to an end on 6 December 1420. He had a surplus quantity of wood ready prepared and planed and this 'for which William Soper ought to account' was handed over for the refitting of the *Jesus*, the second largest of Henry V's new ships.

1 Cf. E 364/65 'catabo vocat pytchketill'.

2 Presumably the carpenters brought their own saws. A second saw appears at the end of Berd's account.

3 See also *C.P.R.* Vol. II, Henry V, p. 269.

IV. *The completion of the great ship*

(*a*) *Her master and crew*

Although Berd's accounts for the *Gracedieu* continued until 1420, it would appear that the great ship, if not her retinue, had reached some stage of completion two years previously, for in July 1418 the Bishop of Bangor came down to bless her.[1] On 14 December 1418 William Payne was commissioned as her master and empowered to take mariners for her governance and safe-keeping.[2] Payne was an experienced sailor who had been in the royal service previously. His first command was the royal balinger, *Margaret of the Tower*, in 1418, and from this small ship he was promoted after February 1418 to the command of the carrack *Paule* and given an annuity of 10 marks from the Exchequer (12 August 1418[3]), presumably for his services in Normandy. Soon after his appointment as master of the *Gracedieu* Soper issued him with forty bows, fifty cords for bows and fifty garb of arrows for 'the defence of the said ship'. But it was already obvious to those with firsthand knowledge that the *Gracedieu* was far from sea-worthy. No attempt was made to paint her decoratively, nor to provide her with carved heraldic animals or elaborate flags.[4] Instead she went out to sea for the first time dressed only with an embroidered streamer of St Nicholas, and one or two old gittons. Soper's account roll for this period, when the *Gracedieu* was first afloat, closes with a wage-list for masters and crews, ship by ship. The *Gracedieu* is a significant omission and this must imply that she was never fully manned. As even the *Jesus* needed a crew of 200 men, the *Gracedieu* would certainly have required a minimum of the same number, and such a large wage bill could not have been left out of Soper's accounts if the ship had been fully commissioned. Payne's command as master appears to have been short-lived. As no wage payment has yet been found he was presumably content with his pension during the short period that he was master of the *Gracedieu*. In the Greenwich National Maritime Museum MS. Soper lists his expenditure on the *Gracedieu* of the period immediately after the death of Henry V. He noted that William Payne was her master, but the amount for his wages is left blank. Payne returned to private enterprise, and entered into a trading partnership with Soper. In 1426 they obtained a licence to export goods to Ireland in the *Katherine*, and in 1428 they sent iron and salt there in the same ship.[5] Soper obviously

1 *Victoria County History, Hampshire*, Vol. v, p. 368.

2 *C.P.R.*, Vol. II, Henry V, p. 208. 3 *C.P.R.*, *op. cit.* p. 120.

4 There is a tradition in Bursledon that what was described there as her figure-head, a lion with paws erect, stood for many years in the garden of a Bursledon public house.

5 *Black Book of Southampton*, Vol. I, p. 8. *C.P.R.*, 1426, p. 239, and *Black Book*, Vol. II, p. 17.

though highly of Payne's capabilities and in June and July, 12 Henry VI, put him in charge when the *Gracedieu* was moved from her mooring at Bursledon to the enclosure made specially for her on the mud. This difficult operation took three days and there was a watch on board day and night. This appears to have been Payne's last connexion with the great ship, and he was paid at the rate of 6*d.* a day, not as a ship-master but in Soper's own words 'as William Payne, that mariner, that discreet master-mariner'.

In any case, by 14 February 1420 the *Gracedieu* was commanded by a mere quarter-master John Gyrdeler, who was commissioned to take mariners for her.[1] Similar commissions at the same time were issued for the *Trinity* and four royal balingers (these all had masters), but the object in each case was merely the governance and safe-keeping of the ships and the *Gracedieu* still remained at her mooring, off Bursledon.

At some time after her blessing by the Bishop of Bangor the *Gracedieu* had left Southampton and sailed round to Bursledon, standing out 'in le Rode' where in fact she was to remain for the next twelve years. She was obviously leaking badly and was being repaired already by a master carpenter, shipwrights, Berders and caulkers. Her crew consisted only of eight sailors who were given victuals as well as wages 'because the ship was there in the Rode'. It is doubtful how long Payne remained on board, but Gyrdeler was certainly in charge by February 1420.

Berd's final responsibility for the ship was to make a list of what he was handing over to Soper. This was as follows:

The great ship called *Gracedieu*
Her 2 boats
Her 1 Cokbote
4 sounding leads
1 bedewe
9 hamours
30 oars
12 forks and shovels
12 augers (2 long)
2 'cartbodys'
4 masts 'whence two are small for boats'
1 bowsprit
8 hawsers
12 cables
78 pulleys
2 pumps
4 pitch-kettles
2 saws
2 pairs of great bellows
15 anchors 'whence 3 are small for boats'
3 guns and 3 gun chambers[2]
1 missen
3 buoys of cork
3 buoys of wood called 'doubles'
1 lathe
8 pairs of tonges
1 firestaff
1 whistle
7 picks
4 clench hammers
1 iron shoe for the pump
1 iron hammer
144 measures of iron for throwing from the top[3]
2 'rostr' of iron (part of the fore and after castles?)
1 iron gear for the anchor
1 iron spade

1 *C.P.R.*, Vol. II, Henry V, p. 269.
2 E.g. blocks. See Lewis, *Navy of Britain*, p. 417.
3 Cf. E 101/53/5, 'Gaddis ferr' pro defensione iactone tempore guerr' ext' les Topps'.

57 sheves and Crossebrac
200 lb. bell brass
900 lb. pot brass and pan brass with the remainder of 8 brass chains
2 sail-yards
4 sails and 3 bonnetts, whence two sails are for boats, with all the shroud
2 crowes of iron
1 balinger called the *Fauconer*, with her gear.
1 other balinger called the *Valentine* with her gear.

The *Gracedieu* remained in the Hamble estuary for the rest of her days; her only move was to the mud. With her subsequent history it is not the purpose of this article to deal. Her great mast was dismantled and on the night of 6/7 January 1439 she was struck by lightning and set on fire. The damage done to her then was not merely the result of inefficient ship-keeping, and till the fire occurred small but fairly continous attempts were made to maintain her.

(*b*) *Her retinue*

A happier fate was that of the two balingers, the *Falconer* and the *Valentine* which formed, with two boats and three smaller Cock-boats, the retinue of the *Gracedieu*. All may have been intended to serve on occasions as tugs for the *Gracedieu* but it was also common for a great ship to be given her own attendant boats; thus the *Jesus's* balinger was known as the '*Follower*', (later the *Little Jesus*).[1]

Soper's account refers to the *Valentine* as a barge, and she appears in the *Calendar of Patent Rolls* as the '*St Valentine*'. She was larger than the *Falconer*, 100 tons.[2] Her master was Richard Rowe, a well-known naval captain, who had previously commanded the royal balinger *Swan*, a small ship with a crew of thirty-five sailors.[3] Rowe, like John William, was half-owner of a ship, the other part of which was owned by the King, and on 7 July 1422 this barge, the *Marie Bretton*, was sold to John Tendryng of Dartmouth for £40, and Rowe got a half share in the sale. The *Valentine* was manned by seventy-five sailors and three boys. Her defensive equipment appears to have consisted only of Soper's issue of twenty bows, twenty dozen cords for bows and twenty garb of arrows. The *Valentine* had her own cock-boat, and her gear consisted of two sounding leads, one hamour, forty-eight oars, one sail, one bowsprit, five cables, three anchors, one sail-yard, one sail and four bonnets, one pump and the shroud.

The *Falconer* (80 tons), master, George Maxtowe, carried a smaller crew of fifty-nine sailors and she appears always to have been referred to as a balinger.[4] She also had her own Cock-boat but only carried thirty-eight oars. Like the *Valentine* she had a mast, bowsprit, a pump, a sailyard, a sail with

1 See Mrs W. J. Carpenter Turner, H.F.C. *Proceedings*, Vol. XVIII, Pt. II, p. 173, (1953) 'The *Little Jesus of the Tower*, a Bursledon ship of the early 15th century.'
2 G.N.M. MSS. 17(*b*).
3 See a bundle of receipts for sailors' wages, P.R.O., E 101/49/25.
4 G.N.M.M. MS. 15(*b*).

four bonnets and the shroud, but only two anchors. On 20 October, 9 Henry V, Maxtowe was paid £8. 13*s*. 4*d*. for his voyage to Normandy with fifty-nine sailors in the *Falconer*.

Rowe did well with the *Valentine* and on 24 June 1421 he was granted a pension of 5 marks yearly for his services but by October of the same year something had occurred which made it necessary for Soper to order the arrest of Rowe and Maxtowe, with the masters of two other royal balingers, the *Gabriel* and the *Swan*. This was not a permanent disgrace. With the economy necessary after 1422, the *Valentine* was hired out for £10 to Paul Morell, an Italian merchant, for a voyage to Calais with wool, in March and June, 1 Henry VI. She was later sold to John Jon and John Emery of Southampton for £80. Rowe himself was one of a syndicate, mostly of Dartmouth men, who bought the royal balinger *Nicholas* for £66. 13*s*. 4*d*. in 1423. At the same time the *Falconer* was sold to Adam Forster of London for £50.[1] Rowe was back in royal service and serving again in the French War by 13 Henry VI, for on 7 August in that year he was Master of the royal balinger, the *Little Jesus*.[2] Mextowe or Maxtowe (spelt in many different ways) next appears as the master of the *Gylyene* of Southampton, a ship importing wine for Soper in 1427–8.[3]

V. *Conclusions: Some suggestions as to why the great ship was a failure*

When the *Gracedieu* made her first and only voyage from Southampton to Hamble, Robert Berd's great task was over and he disappeared from naval history. On 2 March 1421 he was appointed Clerk of Works for the making of 'trepogetes', guns, ladders and other ordnances of war,[4] and in the next year he was commissioned to arrest all labourers who were on the King's service in France and had departed from it without licence. If this implies that he was in France at this date it is interesting to speculate as to whether or not he had any connexion with the mysterious great ship laid down for Henry V at Bayonne but not apparently finished. It would seem more likely that the failure of the *Gracedieu*, followed so soon by the death of the King, ended his career as a naval architect. We know nothing of his family nor of his personal circumstances. He remains known only as the one man most responsible for the building of the largest ship in the English navy before the seventeenth century.

It is not difficult to explain why the *Gracedieu* was a failure. Certain inherent defects are obvious. They include the unsuitability of three-skin

1 P.R.O., E364/65.

2 See his agreement with Soper when the latter handed over the *Little Jesus* to him. P.R.O., E101, bundle 53/no. 11.

3 Studer, *Port Book*, p. 4.

4 *C.P.R.*, Vol. II, Henry V, p. 317.

clinker construction for such a large ship. The decision to build her had not been preceded by any careful selection of timber for the navy, and a large proportion of the wood used must have been unseasoned. Though there were many men accustomed to work on the building of much smaller clinker-built ships, there were few with experience of a really large vessel. It is difficult also to decide how much experience of handling big ships the eight sailors who formed her skeleton crew had, or even where they might be expected to have gained this experience. Payne had only a few months as master of the *Paule* and it is significant that later on when the *Gracedieu's* mast was taken down it had to be done by a master-mariner from Sandwich, the port of call for Italian carracks.[1] Foreign sailors, Portuguese and Genoese, who were used to large carracks were called in by Soper to work on the refit of the *Jesus*. The *Gracedieu* obviously had more than one sail and one of them must have been very large indeed. In the *Jesus* and the *Holyghost* there was a windlass for raising the sail quickly 'in modo Carrac', i.e. Carrack fashion.[2] Significantly, nothing resembling this is to be found in the lists of the *Gracedieu's* gear, and it is just possible that her greatest sail was never hoisted, and after her launching she was towed to Bursledon. She was certainly towed from Bursledon to her bed on the mud. Other omissions are the 'Toppe Castell' which always occurs in lists for the *Trinity Royal*, *Holyghost* and *Jesus*, and a 'Dyell'[3] These omissions possibly imply that although the ship was launched her equipment was not complete, possibly because it was considered desirable to see whether she was sea-worthy first. A comparatively minor difficulty was the fact that there was really no port in England where the *Gracedieu* could be brought alongside. All repairs and maintenance had to be done either at sea or when she was beached on the mud. It is little wonder that more than two hundred years elapsed before there was built again in England a ship which could be compared in size with Henry V's *Gracedieu*.

1 E 364/65. 2 E 364/61.
3 The *Graund Marie* had one; E 364/65.

RECORDS

NAUTICAL MANUSCRIPTS IN THE UNIVERSITY LIBRARY, CAMBRIDGE

There are twenty-eight nautical MSS. in this library, which may be conveniently divided by their subject-matter into eight papers or short treatises, one calendar of lost shipping, and nineteen log books. The papers, which date from the sixteenth to the nineteenth centuries, may be arranged in chronological order as follows:

MS. Dd. 3.49. English. Paper. Measuring $12\frac{1}{4} \times 8\frac{1}{4}$ in. ij + 80 leaves. Dating 1590–5, in the writer's autograph. Foster (Thomas): *Bearings and Soundings.* A series of descriptions of soundings, etc., round sections of the French, English and Italian coasts, divided into nineteen parts and dated at different periods between 1590 and 1594/5. There are elevations, diagrams, directions for use of the astrolabe, a calendar, drawings of cities, etc. On folio j, is 'A note of the dangers upon the coasts of France', dating from the eighteenth century. There is no record of accession.

MS. Add. 4746. French. Paper. $8 \times 5\frac{1}{4}$ in. j + 74 leaves. Seventeenth century. Bound in green leather with gilt tooling, contemporary. *Elemens de l'Art du Marin.* An anonymous treatise consisting of a preface and two books, each divided into short sections with separate titles, the whole followed by four diagrams.

The book belonged to the first Lord Acton, and was purchased in 1903 after his death from the second Lord Acton with other of his MSS.

MS. Add. 3972. French, English, Spanish and Latin. Forty-three leaves of unbound papers consisting of a number of letters, copies of correspondence, drafts, etc., dealing with the problem of finding longitude at sea, which passed through the hands of, or were composed by, Sir Isaac Newton, dating 1697–1725.

Presented by the fifth Earl of Portsmouth, the representative of Sir Isaac Newton, 1888, with other papers and MSS. of Sir Isaac Newton.

MS. Add. 4005, *folios* 53–64. English. *c.* 1700. A paper in the autograph of Sir Isaac Newton entitled *General Proportions and Observations for all the Parts and Lines to be used in any Kind of Ship or Galley.*

This is one of a collection of papers and drafts left by Sir Isaac Newton or written concerning him and his work.

The MS. was presented at the same time as Add. 3972 (above).

MS. Mm. 6. 54, *folios* 46–8. English. Letter from A. B. to John Nourse, 25 April 1767, for insertion in the newspapers concerning 'Mr Harrison's Watch for discovering the longitude at sea.'

This is one of a miscellaneous collection of historical documents, letters, etc., which belonged to Dawson Turner and was purchased at the sale of his MSS. 1859, lot 575.

MS. Add. 4652. Italian. Paper. $12\frac{1}{4} \times 8$ in. 1780. Bound in vellum. vj + 165 leaves. *Trattato della Navigazione* in nineteen chapters, followed by fourteen diagrams.

Belonged to the first Lord Acton. Purchased as MS. Add. 4746 (above).

MS. Add. 6458. English. Paper. $11\frac{1}{4} \times 9\frac{3}{4}$ in. 4 + 71 + iv leaves. *c.* 1797. Marbled paper covers. A nautical description and survey of the Scilly Isles taken by Graeme Spence, Maritime Surveyor to the Admiralty, by order of the Admiralty. Attached to p. 21 is a slip of paper containing a note of a ship being struck and pierced by a sword-fish near Barbados (dated Liverpool, 10 October 1796); also an extract from the *Herald* newspaper, 4 August 1818, describing a ship's striking of a whale between Waterford and Milford Haven.

The book was acquired by F. J. H. Jenkinson, M.A., Librarian, March 1913 and bequeathed by him 1923.

MS. Add. 2907, *folios* 336–8. Notes made by G. P. Badger on steam postal service to India 12 July 1860, from a collection of copies of despatches dealing with Muscat and Zanzibar compiled by or for G. P. Badger.

The volume was presented by Mrs G. P. Badger, 19 October 1888.
This concludes the papers and treatises.

MS. Gg. 1. 29, *fo.* 95. A list of shipping lost, perhaps between the years 1625 and 1628, compiled in the late seventeenth century. The list occurs strangely enough among a collection of *Quaestiones Theologicae* and copies of official documents.
The volume was no. 959 in the collection of John Moore, Bp. of Ely, †1714, which was acquired by King George I and presented to the University in 1715.

The nineteen log books are as follows:
Add. 38, *fo.* 33*v*. Extract from log of the *Mary* 25 and 26 May 1700.
Add. 4617. Log book of the *Thistleworth*, on a voyage from Deptford to Bombay and back to Deptford, 5 February 1713/4 to 15 May 1716. Bound in vellum.
Add. 4618. Log book of the same, Deptford to Stokes Bay, 25 October 1718 to 24 August 1720. Bound in vellum.
Add. 4619. Log book of the *Cadogan*, Captain John Hill, on a voyage to China, 5 February 1720/1 to 29 July 1722.
There are also portions of logs of the *Morice* and the *House of Austria*. Owned in the nineteenth century by Richard Richason. Bound in vellum.
Add 4620. Log book of the *Stanhope*, from the Cape to Bombay, 27 December 1721 to 10 October 1722. Paper covers.
Add. 4621. Log book of the *Lyell*, from Deptford to Canton and back, 3 October 1721 to 4 June 1723, followed by *Some Remarks on a Voyage to China by Capt. Edw^d. Harrison to Capt. Cook* and *Some Directions usefull in a Voyage to China*. Bound in vellum.
Add. 4622. Journal of a voyage in the *Lynn*, from Gravesend to Canton and back, Captain Edward Elliston, kept by John Acton 1 December 1728 to 5 July 1730. Bound in vellum. A slip lying loose in the book contains rough accounts, the name *Lynn* and the signature Charles Turner.
Add. 4623. Log book of the same, from Gravesend to Canton and back to Deptford, 26 October 1729 to 23 July 1731 followed by *Rules to be Observed in coming to England*. Bound in rough calf.
Add. 4624. Log book of the same, from Deptford to China and back to a point off Start Point, 21 December 1731 to 18 June 1733. Bound in rough calf.
Add. 4625. Log book of the *Fort St George*, on a voyage to Bombay, 25 November 1740 to 26 July 1742 preceded by a list of soldiers on board commanded by John Acton. Bound in rough calf.
Add. 4626. Log book of the *Salamander*, bomb-ketch, Edward Buckley, Commander, from Bombay to Gambroon and back, 1 September 1741 to 1 April 1742.
Fo. 47 v. Log book of the same, Robert Lyell, Commander, from the same to the same and back, 2 April 1742 to 3 November 1742.
Fo. 77. Log book of the *Defiance Prawn*, Thomas Leeke, Commander, in Mahim River, 4 November 1742 to 31 August 1743.
Fo. 90. Log book of the same, Francis Atkins, Commander, in the same, 1 to 24 September 1743.
Fo. 91 v. Log book of the *Restoration*, frigate, Thomas Leeke, Commander, 25 September 1743 to 3 April 1744. Bound in dark red leather covered with sacking.
Add. 4627. Log book of an unknown English vessel, 23 May to 26 August 1747. Bound in half vellum.
Add. 4636. Log book of the *Alerione*, 1 July to 5 November 1750. Marbled paper covers.
Add. 4628. Log book of the *Aquila*, 13 August 1750 to 8 November 1751. Italian. Paper covers.
Add. 4634. Log book of the *Leone*, 17 May to 20 September 1755. Italian. Paper covers in a vellum wrapper with leather straps.
Lying loose between the wrapper and the front cover is the log book of the *Alerione*, 27 August to 5 October 1753. Italian.

Add. 4635. Log book of the *Aquila*, 17 May to 12 September 1755. Italian. Paper cover in a vellum wrapper with leather straps.

Add. 4629. Log book of the *Alerione*, 6 July to 31 October 1762. Italian. Paper covers in a vellum wrapper with leather straps.

Add. 4637. Log book of the *Disarmo*, 14 November 1763 to 25 August 1764. Italian. Bound in vellum.

Add. 3033. Log book of the *Alarm*, Captain Charles Cotton, 11 February 1782 to 3 May 1783. Bound in rough calf.

All but *Add.* 38 and *Add.* 3033 belonged to the first Lord Acton and were acquired from the second Lord in 1903. *Add.* 38 belonged to Samuel Knight, D.D., Prebend of Ely and rector of Bluntisham, Hunts., †1746. From him it descended with other MSS. to J. P. Baumgartner of Milton, Cambs., who presented it 1859. *Add.* 3033 appears to have been purchased.

B. F. C. ATKINSON (UNDER-LIBRARIAN)

[It is hoped, with the co-operation of other librarians, to publish records of nautical manuscripts in other collections in the country, and make a series of the matter. Ed. *M.M.*]

NOTES

THE FIRST H.M.S. *OCEAN*

'Alexander Fall, Carpenter of H.M.S. *Ocean*, was appointed Master Shipwright at Antigua on Jan. 17th 1759.' This simple statement occurs in Mr Knight's article on 'Carpenter' Master Shipwrights in the *M.M.* for October 1932 (p. 421), and at first there seems no need to question it. The difficulty is not apparent until one comes to consider the names of ships for index purposes, but then we are faced with the fact that the first H.M.S. *Ocean* was not launched until more than two years after Fall had left her for his new post. Even if it were the custom in those days to appoint a carpenter to a ship in the very early stages of her construction, there is still another difficulty; the name 'Ocean' is believed to have been taken from that of the French ship taken and burnt off Lagos, and that did not take place until 18 August 1759.

Charnock gives the *Ocean* of 1761 as 'rebuilt', and this seemed to offer at least a partial explanation. One of the earlier 90's might possibly have been renamed before being rebuilt, but investigation shows them all accounted for otherwise. Besides, both the Draught and the Progress Books refer to the ship launched at Chatham in 1761 as a 'New Ship'. Orders for her building were issued on 22 April 1758, she was begun on 4 August of that year and was launched on 21 April 1761. At what stage the name 'Ocean' was applied to her is not clear, but as already mentioned it seems more than likely that it was not until the late summer of 1759. It would have been an extraordinary coincidence if the choice of a name previously unknown in the R.N. should have been justified almost at once by the capture of a French ship of the same name.

The easiest way out of the difficulty would be to assume that Mr Knight made a mistake either in the date or in the ship's name. Both seem unlikely; the date is confirmed by those of subsequent appointments to the same post, while the name 'Ocean' is not one likely to be written or printed by mistake for anything else. 'Union' might be just possible, if sufficiently badly written, but that is about all.

Perhaps someone else can solve this problem; for my part I have to acknowledge myself beaten.

R. C. ANDERSON

THE RIG OF EARLY MEDIEVAL WARSHIPS

Dr R. LeB. Bowen's latest onslaught (*M.M.*, August 1953) may seem to call for some retort, if only because he has not attempted to answer my detailed criticism (*M.M.*, April 1950) of his first broadside (*M.M.*, January 1950). In particular he ignores my suggestion that he tampered with my rendering of Kameniates without reference to the original text, and I really must ask him to construe his version word for word with the Greek—or confess that he omitted to do so. I can safely leave it to readers of the *M.M.* to judge whether or not the main point of his first attack was not, as he would now assert, that the text of Kameniates does not warrant my interpretation, but that my reconstruction of the Arab device offended him as an engineer. Whatever the date of the Ravenna mosaics—and in fact a thirteenth-century dating has never before been challenged by an art historian of repute—and whatever their theme, I am surely entitled to draw attention to the fact that in them we have a medieval work that depicts an improperly balanced truss that agrees so well with my construction of a very obscure passage in Kameniates.

Paris MS. grec. 510 is brought out of the hat as a *deus ex machina* to prove that as late as the ninth century yards were 'hung from their exact middle'—I quote Dr Bowen's own words. In fact I have known about that manuscript for many years, but have been chary of discussing it because—as Brindley showed—it is a work of the early Macedonian renaissance. Since Brindley wrote, our whole conception of Byzantine manuscript art has had to be completely revised in the light of the researches of scholars such as Weitzmann, and no medievalist would presume to cite Paris MS., grec. 510 as evidence for the appearance of ships in 880 without expressly stating his reasons for disassociating the illustrations from the principles we have now to apply in the case of manuscripts of the Macedonian renaissance generally. Prima facie the ships therein depicted are those of the pre-Iconoclastic era at the very latest—in which case Dr Bowen's citation will surely rank as one of the most disconcerting boomerangs in the whole history of this *Journal*—and I really do feel that it is up to Dr Bowen to justify his use of the manuscript as a stick to beat me by demonstrating that it is not governed by principles that certainly seem established in the case of the Joshua Roll. So confident, however, is his citation of Paris MS. grec. 510 that I feel sure that he must have excellent reasons for excepting it from the general run of Macedonian manuscripts, or else for exploding the whole Weitzmann thesis. By publishing a brief exposé of these reasons, Dr Bowen would be doing a great service to nautical archaeology, but I fear that it will be no easy task. I make no pretensions to be an art historian, but I must say that at present I can see no obvious reason for distinguishing the Paris manuscript. Moreover, even if Dr Bowen should clinch his 880 dating of the vessels, we are still left with the fact that the ships depicted are *φορτηγοί* and not *κουμβάρια*—the Byzantines did recognize that distinction, or is Dr Bowen going to argue that passages such as *Περὶ θαλ.* 10 are meaningless?

I am perfectly prepared to discuss what remains of Dr Bowen's paper, but find it difficult until he declares whether or not he accepts the consensus of learned opinion in another matter, namely that the Ravenna mosaics in question do date from the thirteenth century. I have re-considered this problem very carefully, and find that I was unduly hard on the art historians when I seemed to query their findings. In particular, I must ask Dr Bowen to take into account the evidence afforded by a medieval reconstruction of the edifice—at precisely the period to which the pavement is attributed on stylistic grounds! I have seen the mosaic with my own eyes, and my impression is still that the 'foresail' is set. For the sake of argument, however, let us concede that it is furled and the yard lowered to the deck. We know from a variety of sources—e.g. *Περὶ θαλ.* 5—that all gear had to be duplicated. Consequently the 'échelle' can still be made from the obvious members, and all Dr Bowen has achieved is the removal of a slight discrepancy between the mosaics and the narratives of de Clari and Villehardouin. In other words, he has assisted the very identification that he set out so fiercely to disprove. However, our confidence in his ability to interpret pictorial evidence must be shaken by his uncompromising assertion that Paris MS. grec. 510 demonstrates yards 'hung from their exact middle'. I believe I am not the only student who has looked up Brindley's plate and found that the yards in question are hung eccentrically with the after portion substantially longer. Perhaps Dr Bowen will be good enough now to concede

that my interpretation of the phrase τὰ διὰ μέζου προβεβλημένης is in fact vindicated by the very evidence he adduces against it. R.H.M.D.

In his criticism of Mr Dolley's article on the Ravenna mosaics and his previous notes with regard to early lateens Dr Bowen insists that the yards of the vessels shown in a manuscript of about 880 are hung from their exact *middle* (the italics are his). The drawings were reproduced in *The Mariner's Mirror* in 1926 (p. 13) and it is a simple matter to check this statement. Dr Bowen says that he will leave it to readers to decide what the facts show.

I have measured the reproductions carefully and make the after or upper end of the yard very distinctly more than half its total length in each case. The proportion varies between 53 and 56% of the whole.

In the sketch of a large galley of about 1445 reproduced in Vol. 25, p. 144, the yard on the mast in the bows—I purposely avoid calling it either the mainmast or the foremast—has 56% of its length abaft the point of support; in the rule given on p. 161 the proportion is 57%. It is clear, therefore, that the practice of the end of the ninth century was the same as that of the middle of the fifteenth. In either case the yard was slung with quite an appreciable excess of length abaft its point of support; it was *not* slung from the exact middle.

In one matter Dr Bowen seems to me to have the best of the argument. The knight in the Ravenna mosaics cannot be climbing up the yard, because that yard is shown lowered with its sail furled. In the other, which he evidently considers decisive, the very evidence which he quotes is emphatically against his case. R.C.A.

THE ADMIRALTY TELEGRAPHS

Further search has revealed that the unknown shutter station on the line from the Admiralty to Yarmouth was on Dunstable Downs at 796 ft. in the fork formed by the two roads to Dunstable from Whipsnade and Kensworth Common, respectively. This was found at the British Museum with the kind help of Mr R. A. Skelton, in a photostat of the original drawings for the 1810 Ordnance Survey. There are no signs of the station to-day but the site is an extremely good one, at the highest point of the downs, and there can be no doubt about it. The problem still remains of the sudden right-angle turn of the line on its way forward towards Lilley Hoo, and it seems that we must accept the fact of there being a double shutter frame at this point. Another informant draws attention to *St Albans* (*The Story of the English Towns*) by William Page, F.S.A. (1920), whose frontispiece depicts the ancient clock tower in the middle of the town, complete with the telegraph hut and frame upon it. This seems to have been made possible from the fact that the tower was formerly much higher and roomier. The book says that it was used by the Admiralty as a semaphore (*sic*) signalling station at the time of the Napoleonic Wars from 1808 to 1814.

Yet another correspondent mentions Greenwood's map of Sussex of 1823 which shows 'Semiphores' at Older Hill, at Compton and in two places on Beacon Hill. The northern site at Beacon Hill (or The Beacon) at 795 ft. was not of the semaphore but of the earlier Murray shutter telegraph, while that further south (at about 650 ft.) was the semaphore house afterwards converted by Earl Russell (Bertrand Russell). It is odd that William Cobbett also should have called the 'thing' a *semiphore*, likewise in 1823 (see *M.M.*, April 1938, p. 186). H.P.M.

ROYAL STANDARDS IN MOURNING

The note (August 1953) drawing attention to the recent change in handling the so-called Royal Standard on the death of the Sovereign is most interesting and poses a pretty problem. High Authority has decided now that as the Crown is at no time extinct, the Royal Standard should never be lowered to half-mast! Surely this is muddled thinking and heedless of its real nature.

Properly speaking this emblem should be called the Royal Banner, and like any other banner it is a representation of a shield of arms on a rectangular flag. Now arms are the personal and inalienable property of an individual, and though after death the heir may succeed to the same

arms, yet the deceased still remains certain prior rights in those arms, rights which have been recognized for some 800 years. For example, the shield of arms used to be carried in the funeral procession, together with the helmet and banner, and these were hung above the tomb in perpetuity. The shield and helmet of Edward, Prince of Wales and Aquitaine, still hang (unless displaced recently) above his tomb in Canterbury Cathedral as do those of the Cobhams in Cobham Church, Kent. Elias Ashmole, in his *Institution, Laws and Ceremonies of the most Noble Order of the Garter* (1672), describes in detail Edward IV's banner which was still hanging above his tomb in St George's Chapel, Windsor, 200 years after his death. Arms have been carved on tombs and memorials or etched on brasses for centuries, and this practice has never been considered an infringement of the rights of the heir who inherited them. In addition, should a posthumous daughter be born, she inherits the undifferenced arms of her dead father, regardless of whether an heir male has succeeded to the arms or not.

One might multiply examples like this to show that the dead have never been denied the rights to the arms they bore in life; but the point at issue here is that there is a view, held presumably now by the Earl Marshal, the College of Arms and the Lord Chamberlain's Office (but not, it is hoped, the Admiralty) that henceforth the Sovereign's right to his Royal Banner should be restricted. This departure from precedent is based apparently on the doctrine 'le roi est mort—vive le roi' which is deemed to apply to this regal emblem. The fallacy of this notion will become apparent on examination.

The so-called Royal Standard is used in every way as a normal personal banner; it is flown on royal palaces, castles, and other residences to denote the Monarch's presence; it flies afloat whenever he or she is embarked, and many are familiar with the Royal motor-car and its miniature banner borne like a boat flag. Apparently this has given rise to the belief that its use is solely to show his or her living presence. But this is by no means so. The Royal Banner, for example, always hangs above the Sovereign's Stall in St George's Chapel to display membership of the Order of the Garter, as with other British Orders, and should her Majesty accept membership of one of the Orders of Knighthood of a foreign country (admittedly the number of such Orders are dwindling) which still retains heraldic appurtenances, it would be hung abroad with those of other knights. Again, as has been pointed out, the Standard is flown at royal birthday parades of the Services whether the Sovereign is present in person or not.

When these facts are considered it is evident that the Royal Banner cannot be treated like the Admiralty Flag and flown at the masthead perpetually. It might be argued that the Admiralty Flag is not a personal banner to-day, but unquestionably the Sovereign's flag is and always has been. When Her Majesty departs to visit Australasia the Royal Banner will not be flown in Britain for many months but no one is going to consider in consequence that the Crown is extinct.

Just as the death of an admiral while holding a command is signalized by the half-masting of his flag, so it has been a long established custom to half-mast the personal banner of king or commoner to denote death. The dead man's banner would be carried at his funeral (cf. provisions made for this in the Black Prince's will) and then only would it be struck permanently. If, now, a King is to be denied his personal banner from the moment of death, because it belongs to his successor, what arms can be used for the deceased ruler? As has been shown, it is inconsistent under the new ruling to cover his coffin with the Royal Standard since, from the moment of death, this is no longer the deceased's arms but those of the new Sovereign! What arms can be carved on his tomb? Surely not the Royal arms, because it is maintained that these are the sole property of his successor!

Garter's contention that the dead cannot fly flags is widely open to doubt. Personal flags are, and always have been, flown by others *for* the owner. Kings, generals, nobles, admirals, and others have never been in the habit of raising their own banners or flags personally. The view that only flags belonging to the living are half-masted when a death occurs is confusing a salute—'ave atque vale'—with a signal intended to convey the meaning that the holder of the right to the banner has died, but that the unburied body still lies nearby. Personal flags are not lowered in mourning by, or under orders, of their owners as such action would indicate their own demise. Such flags of the living as have been lowered in token of respect will be raised to the masthead again after the funeral, but the banner of the dead person will be struck forever. The mere hauling down of a personal

banner signifies that the physical manifestation of the owner has left the place en route for another. Half-masting the banner shows that the body is still present, but that the spirit has left.

Mr Peacock's note should give food for thought—and let us hope action—in high places. Steps should be taken to clear up the present obscure position that has been created so unnecessarily, as speedily as possible, otherwise we are never going to be sure in the future when we see the Royal Banner being hauled down whether the crowned head of the realm is going away on a visit, or in fact has just died.

T. R. DAVIES

'THE CHINESE YULOH'

Readers of *The Mariner's Mirror* owe a debt to Sir Frederick Maze for his 'Notes on the Chinese Yuloh'. The yuloh is a most ingenious labour-saving device for sculling over the stern, but with the advent of outboard motors and impellers it may eventually disappear from practical use.

The design of the yuloh varies in different parts of the China Coast, but in the writer's opinion the design used in Hong Kong is the simplest and most practical, and has been used in a yacht.

The principle is, of course, the same everywhere: the act of working the yuloh from side to side feathers the blade automatically, and the pressure is taken by a lanyard attached to the floor or keel of the boat, so that all that the operator has to do is to work the yuloh from side to side.

The Hong Kong yuloh has no 'kinks' as described by Sir Frederick Maze, and is usually made from broken or rejected ash oars of British origin, but the upper shaft or loom is of local hardwood.

The loom and blade portions are joined together by two bolts or dowel-pins and bound with copper-wire whipping soldered over, though rattan lashing is also used sometimes. The pintle socket is just above this joint.

Lighters and junks in Hong Kong use two very large yulohs, one over each quarter of the poop, and manned by two or three men. In both junks and sampans, yulohs are also used as sweeps or oars in the forepart of the vessel. When so used, the yuloh is slung by a grommet from a peculiar form of thole-pin with notches to adjust the height of the grommet to suit the rower. The above remarks refer to Hong Kong many years ago, but the methods described have probably not changed.

In Japan, at any rate on the inland lakes, the yuloh is more elaborate and could not be used as a sweep, as in Hong Kong. The loom is shaped somewhat like a cobra's hood, the underside being flat, and the pintle-socket is in the middle of the underside. The shaft of the blade is set at a very definite downward angle and is secured to the loom by dees and pins.

The reasons for these elaborations are probably due to the fact that the pintle is sometimes made of hardwood, and the socket, hollowed out of the loom, must therefore be larger than when an iron pintle is used. The heavy loom would also probably upset the balance unless the blade were set at an angle to compensate it.

The Chinese seafarer has originated and developed some extremely ingenious and practical gear as well as the yuloh, which deserve study.

The Chinese self-reefing lugsail is most suitable for the sudden squalls of the China seas, and the network of adjusting lanyards for the sheet, enable the sail to be adjusted from foot to peak to make the most of light airs.

The Royal Hong Kong yacht club used to open its season with a long-distance race to the Gap Rock and back. The Royal Navy had a comfortable junk-rigged yacht called *Tavy*, who was usually hard put to it to save any of her large handicap, but on one occasion a sudden very heavy squall played havoc with the fleet, but *Tavy* never altered course, she just eased her halliards as required: 'One reef, two reefs, three, four, five reefs', then, 'four reefs, three reefs' and eventually full sail again; and on that occasion she had no need of her handicap as she sailed home first of the whole fleet.

L. DIMMOCK

Not all students of Chinese nautical research will agree with Colonel Dimmock's statement that the straight yuloh is the simplest and most efficient type. Moreover, to say that 'all the operator has to do is to work the yuloh from side to side' implies that it is easy to handle it successfully. Actually the yuloh is by no means simple to operate.

Editor

MORE ON THE FRAMING OF MODELS

Dr Anderson's opinion that the normal framing of what are usually called 'Navy Board' models cannot be accepted as a true representation of the framing of an actual ship[1] is true in that the frames are much too regular in size and the number of parts is less than in a full-size ship. However, I believe that there is good evidence to show that they are not far from a true representation.

Accepting, as does Dr Anderson, that the size and spacing of the floor timbers are in proper scale the first point to be settled is the position of the first futtock. Since Dr Anderson states that the second futtock butted against the floors, he accepts a first futtock between the floors as noted in Mainwaring's Dictionary:[2]

'Sleepers are those timbers which lie fore and aft the bottom of the ship on either side of the keelson, just as the rung-heads do go. The lowermost of these is bolted to the rung-heads, and the uppermost to the futtocks, and so these between them do strengthen and bind fast the futtocks and the rungs, which are let down one by another and have no other binding but these sleepers.'

Although the *Sparrow-Hawk* of 1626 was a smaller vessel, a description of her wreck bears out this type of construction:[3]

'The first futtocks overlap the floor timbers about two feet, placed alongside them, forming almost solid work on the turn of the bilge, with a glut or chock below each of them, but they were not fastened together.'

Using the floor and frame sizes quoted from the MS. of 1676 where the floors are sided 14 in. and spaced the same, it is my opinion that, considering the rough hand-hewn timbers of the seventeenth century, 13¾ in. is certainly a neat fit between floors and certainly produces a solid band of timber at the overlap.

The second point to be determined is the position of the second futtock and I turn again to a definition from Mainwaring:[4]

'Spurkets are the holes or spaces betwixt the futtocks or betwixt the rungs by the ship's sides, fore and aft, above and below. To the spurkets below in hold (which are below the sleepers) there are boards fitted, which they take up to clear the spurkets if any ballast go in betwixt the timbers; but for those aloft there is no use, only it were good they were in all ships fitted up with light wood, or old junks, to keep the ship's sides, aloft, musket-free.'

To me this definition indicates that there were spaces between the futtocks similar to the spaces between the floors. Hence, if there was a space between the first futtocks, the second futtocks could not butt against the ends of the floors, nor, similarly, the third futtocks against the first as Dr Anderson states. The wreck of the *Sparrow-Hawk* showed no second futtocks at all. Certainly if they had butted against the floors they would have survived up to the level of the existing first futtocks even if they had deteriorated above that point. From this I assume that, in the early seventeenth century at least, the second futtocks overlapped the first futtocks in the same manner as the latter overlapped the floors leaving large 'spurkets'. As time passed and bigger ships were built requiring more strength, the 'spurkets' probably became smaller as shown by the French construction drawings in the *Atlas de Colbert*.

Fig. 1 shows a simple framing expansion, greatly foreshortened, using the sizes and arrangement noted by Dr Anderson. As he stated there is nothing like a continuous belt of timber but neither are there any 'spurkets'—nearly the entire side is solid timber. Fig. 2 is a similar framing expansion allowing for 'spurkets. . . above and below' and considering the difficulties of obtaining long lengths of large compassing timbers.

1 R. C. Anderson, 'The Framing of Models', *The Mariner's Mirror*, Vol. XXXIX (1953), p. 139.

2 *The Life and Works of Sir Henry Mainwaring*, Vol. II (The Navy Records Society, 1922), p. 227.

3 H. H. Holly, '*Sparrow-Hawk*, a seventeenth-century vessel in twentieth-century America', *The American Neptune*, Vol. XIII (1953), p. 56.

4 *The Life and Works of Sir Henry Mainwaring*, Vol. II (The Navy Records Society, 1922), p. 233.

My suggestion is that the 'Navy Board' model builders followed the true construction but in a simplified fashion. The first and third futtocks were combined as were the fourth futtocks and higher pieces thus maintaining the relative frame line. The same frame siding was used throughout because it would have been a practical impossibility to allow for $\frac{1}{4}$ or $\frac{1}{2}$ in. changes or to fit 'gluts'.

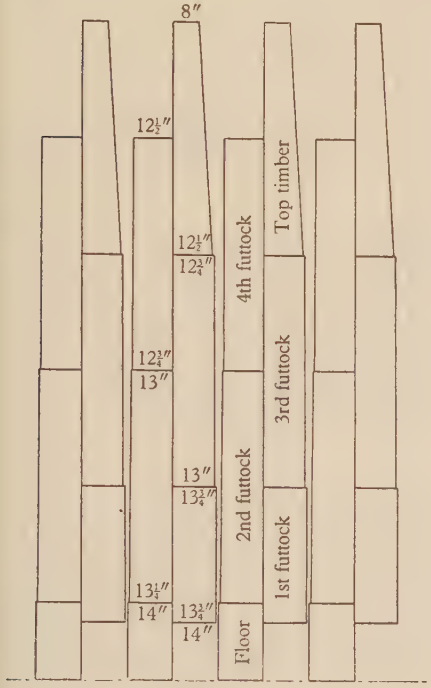

Fig. 1.

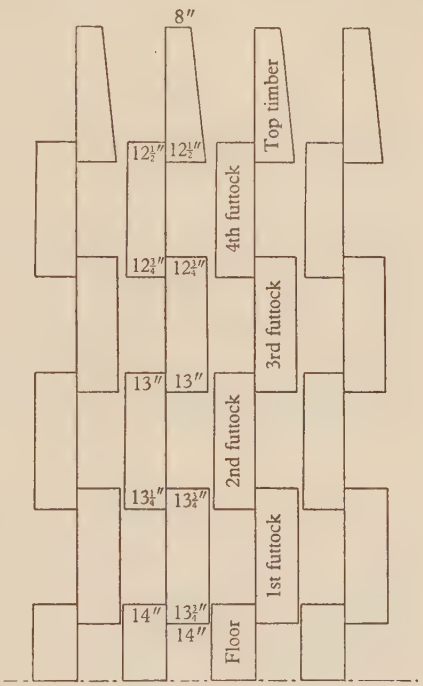

Fig. 2.

Thus a full-size vessel would show five nearly solid bands of timber instead of the two shown by the models. Most of the models have the upper works planked hence the actual framing is immaterial. In the lower body, the fitting of the second futtocks would only obstruct the view of the interior.

WILLIAM A. BAKER

EARLY STEAM WARSHIPS IN INDIAN WATERS

After reading 'Lord Cochrane's Steam Fleet' in the August issue, the reader looked up the references in *M.M.*, Vol. xxx, p. 223 and Vol. xxxi, p. 47. There appears to be some confusion between these two answers to an earlier question, and the following notes from Preble, *A Chronological History of the Origin and Development of Steam Navigation*' (2nd ed. Philadelphia, 1895), pp. 76, 120, 128, will partially clear the air.

A. *Van der Capellen* was the first steamboat of record in Indian waters. It was built by English merchants at Batavia in 1810–11 and was chartered by the government for transport service. Later acquired by Major Schalch she was renamed *Pluto* and used as a dredge in 1822. Following this she went to Arrakan as a floating battery and was lost in a gale in 1830.

B. In 1819, W. Trickett built at the Butterley Works a small steamboat of eight horse-power for the Nawab of Oudh to use on the Jumna.

C. *Snake* was built at Bombay in 1820 with the first engines built in India. Twice wrecked, she took part in seven wars or expeditions and was broken up in 1880.

D. *Diana* was sent out from England for Mr Roberts in 1821. (Preble makes no mention of any fighting service).

E. *Enterprise* arrived at Bengal on 7 December 1825.

Pluto, *Snake* and *Enterprise* are all mentioned as taking part in the fighting, while *Diana*'s activity for the government is relegated to transporting the resident up the Irrawaddy. In view of this, is the tradition of the *Diana*'s 'first to see action' correct? V. C. DARNELL

THE *BERESFORD*'S FLAG

It seems a little late to offer an answer to a query asked in 1913 about a supposedly British flag among the trophies at Annapolis, but it may be worth while to point out that something bearing on the subject appeared in the *M.M.* in 1943, when the original query had probably been forgotten.

The question was, from what ship could a flag marked 'Beresford' have been taken? The answer—or at least a possible answer—can be found in an article dealing with operations on the Great Lakes in the War of 1812 under the title 'A Shipbuilder's War'. There was a British man-of-war called *Beresford*, though only for about one year. The ship *Prince Regent* became the schooner *Beresford* in 1812/13 and was again renamed *Netley* in the following winter. She was in action more than once in 1813, but was certainly not captured and probably not at very close quarters at any time. Mr Winton-Clare, who wrote the article, may never have seen the query; I have only noticed the two widely separated references to the ship in the course of indexing.

R. C. ANDERSON

VENETIAN MEDIEVAL CARGO-CARRIERS

With reference to R. H. Dolley's article dealing with the Ravenna mosaics (*M.M.*, No. 4, November 1952), and while taking for granted the fact that they depict episodes of the Fourth Crusade, it can be assumed that the ships thereon represented were Venetian merchantmen; for it should be remembered that at the time, a sort of 'cash and carry' agreement had been reached between the Crusaders and the 'Serenissima Republica', whereupon the latter was to have fitted out for 24 June 1202, a fleet big enough to carry over to Egypt the vast expeditionary force which, earlier in the year, was to have assembled in Venice. It is well known what followed and how unexpectedly these ships were asked to play a military role during the conquest of Constantinople. Further knowledge about those humble merchantmen may possibly be found in the Corpus of Venetian Maritime Laws (R. Predelli and A. Sacerdoti, *Gli Statuti Marittimi Veneziani fino al* 1255. Venezia, ed. Visentin, 1903) where a few measurements and regulations are given for the construction of different types of craft, such as the *navis longa in columba pedum quinquaginta sex, et pedum trigintaquatuor lanzar in delfinis, et pedum vigintiquatuor ampla in buca et novem pedum aut plus alta et in fundo ampla fiat in patronum voluntate* (p. 51, C. 98, 1229). Other chapters mention the *banzonus* and the *buzonavis* (no dimensions here specified) and finally the *tarretae*, a vessel which seems to have had bulkier proportions and which Jal (Glossaire Nautique, *Tarida*, etc. Vol. II, p. 1430) believes to have been 'dans la famille des galéres', a suggestion perhaps influenced by Marin Sanudo's words '. . . *vasa longa ad orzam incedunt melius, et lucrantur cum vento sibi contrario quam alia navigium breviora* (*Liber Secretorum Fidelium Crucis*, p. iv, cap. 6). Lacking further probative elements, it should be safe to place the Ravenna cargo-carriers amongst the smaller types mentioned by the *Statuta*.

A point of interest of those ships is given by the two rising stern knightheads, a feature recurrent in other contemporary or later documents, such as those which are to be seen in the Marciana MS. *De Passagiis a Gothifredo vel Petro Eremita, ubi iconographia Antiochia Terrae Sanctae* (f. 73/r, 84/r., Codex 124, membr. Sec. XIV), where two *naves*, flying the Venetian standard, bear over the poop, taut between the two knightheads, what looks like a tarpaulin, possibly meant as a rudimentary weather protection for the helmsman, and again in another delightful miniature which is to be found in a Vatican Codex of the twelfth century, *De Arte Venandi Cum Avibus*

(Pal. lat. no. 1071). These same features seem to have lasted for centuries and perhaps were still surviving in the 'Turksche Sayke' of Nicolas Witsen's Scheepsbouw of 1671 (see *M.M.*, April 1929, p. vi).

G. B. RUBIN DE CERVIN

A GANG OF SHROUDS

Cutting out a gang of shrouds was the term commonly used by riggers and seamen when cutting pairs of shrouds from the warp, or shroud-hawser.

The warp was flaked round two posts set at the correct distance apart (i.e. the length of the foremost shroud) and then the bights at one end of the flake were cut through, giving a number of 'pairs of shrouds'.

'A gang of shrouds'—or more often 'a gang of rigging'—was the term applied to the warp both before and after cutting. Hemp rigging is now of course almost unknown.

A. MACDERMOTT

As this valued publication always does, the August 1953 *Mariner's Mirror* contains a wealth of interest. The first item under 'Notes' brings to attention a matter to which I would like to contribute a bit of information.

Mr C. G. P. J. mentions the use of the word 'Gang' in reference to the cutting of a set of main shrouds as occurring in a Captain's Journal of the year 1752.

To the best of my belief, this term has been in common use in this connexion as far back as general knowledge of sea-faring terms is a matter of record. Unfortunately, I am not at the moment within reach of library facilities to confirm this opinion, as many others of your readers no doubt are, and will be heard from accordingly.

However, I have before me as I write a copy of the '*Kedge Anchor*, or *Young Sailors' Assistant*', a work on practical seamanship by one, William Brady, Sailing Master, U.S. Navy, dedicated to 'The United States Navy and Merchant Marine' and published about 1845.

Instructions for cutting out lower rigging are given therein as follows: 'Measure the distance from the larboard side of the mast-head to the foremost dead-eye in the starboard channels, which distance set off on the floor of the rigging loft and stick in a marlin spike at each extremity. The shroud stuff being stretched, stop one end to one of the marlin spikes; take the bight around the other and back again; this is the first pair of shrouds; pass it around again, outside at each end, for the second pair, and continue in this manner until one *gang* of rigging is completed. . . . etc.'

The origin of the term 'gang' as here used will doubtless be difficult to determine. It is in all probability another example of that picturesque imagery in the spontaneous naming of technical and mechanical devices by their original manipulators of which so many have been carried over into professional usage.

The term 'Ganger' as applied to cable is unknown to me. I would be interested to learn if it is a measure of weight or length, or another designation of what are more commonly known as 'Tierers'.

A. C. STOTT

QUERIES

1. British shipbuilders in Russia. When Peter the Great founded the Russian Navy, he engaged a number of shipbuilders from England. Some of them were as follows (I have added the dates of the first and last ships built in each case): Bent, (1711, launched after his death); Brown, Richard (1708–37); Cosens, Richard (1715–37); Davenport, (1721–35); Deane, John (became a naval officer); Ney, Joseph (1719–35); Ramsey, (1720–4).

Ramsey and Davenport had been assistants and were promoted in 1719. Hadley was also promoted at that time, but is not credited with the construction of any particular ship. Other assistants, Johnston, Gardiner and Webb, do not seem to have risen to the higher position.

At a later date there were James (1739–72) and Sutherland, John (1743–62). This may well have been a son of William Sutherland, who wrote two books on shipbuilding in 1711–17.

Is anything known of the careers of these men before they went to Russia? Brown is said to have worked under Fisher Harding at Deptford, but I have not yet found any information about the others. R. C. ANDERSON

2. United States ram-ship *Katahdin*. The splendid article in the August issue by Mr C. J. Greene on H.M.S. *Polyphemus* prompts one to ask if some of our United States friends could supply some technical particulars of a similar type of vessel, the U.S. Ram-ship, *Katahdin*. This was, I gather, a 'Ram' ship only, and did not have the torpedo armament carried by H.M.S. *Polyphemus*. Some 50–60 years ago there was an item in the *Strand Magazine* which gave some excellent pictures of the ship at sea, but very little in the way of technical detail.

W. ADAM WOODWARD

3. The colour 'green' in signal flags. As near as I can discover the colour 'green' was re-introduced in Royal Naval signals around 1905. I know that it was used in flags and pennants during the last part of the eighteenth century. Can any reader say whether any signal flags used this colour during the nineteenth century? C. H. AMME, JR.

4. Marine superstition. Is the origin known of the marine superstition that you must stop the ringing of a glass that has been knocked or you will drown a sailor? The Admiralty, I am given to understand, have not a notion.

If the belief springs from the wail of a vibrating wine-glass it can hardly have arisen on the lower deck.

One can imagine that when the ship had motion enough to make the bell strike the occasion and the waning note might easily turn the mind to a sad ending, but this is pure speculation. Probably the origin is unknown but early references to the belief may occur. It may not specially belong to the sea.

The above query prompts another. What did the man on the lower deck drink out of? We have all met 'flowing cans'. In Smith's *Sea-mans Grammar of 1653*, chap. xiii, describes how in a fight if one ship takes fire both sides help to put it out and then 'the fire quenched, drink kindely one to another; heave their cans over boord, and then begin again as before'. (What did the Purser say about it?) What were the cans like and what were they made of? M.A.

ANSWERS

2. (1953.) Shipbuilding in Ireland. Having been until recently far from Dublin and quite unable to consult the original documents, I can, in answer to Grogreb's request for information on this subject, only as yet give the following references to the Petts in Ireland discovered by Mr Maurice Twomey, a research student at University College, Dublin, for me: In the *Calendars of State Papers*, 1662–5, pp. 606, 674; 1665–9, pp. 2, 42, 63, 139, 189, 391, 531, 579, 604, 628, 631; 1669–70, p. 409. Also, in the *Calendar of Treasury Books*, Vol. 3, Pt. 1, 1669–72, p. 566, where it is a question of sequestration of a Genoese ship and cargo worth £80,000; and in the Ormonde MSS. new series, Vol. iv, in which there is discussion between Ormonde and Anglesey on Peter Pett's pl..n for encouragement of hemp, flax, sail cloth and cordage (1678). J. DE C. I.

6. (1953.) Wars in South America. The naval expeditions on the Parana and Paraguay Rivers during the war of 1865–70 are described in detail with excellent plans in the *Revue Internationale d'Histoire Militaire* (Édition Brésilienne), 1952, no. 11, in three articles: 'Guerra do Paraguai', by General Tristro Alencar Araripe (p. 293); 'Liaisons Tactiques et Communications dans la Guerre de la Triple Alliance Sud-Américaine contre le Paraguay', by Col. Nalot (p. 317); 'Passo da Pátria, Uma Operação Anfibia', by C. M. G. Diogo Borges Fortes, p. 329.

J. DE C. I.

7. (1953.) HAMMOCKS. Commander Charles N. Robinson, R.N., *The British Fleet* (George Bell and Sons, 1895) says that hammocks were introduced into the Royal Navy in 1597.

11. (1953.) SPAR TORPEDO. Considerable information about this weapon at one of the stages interesting to Mr E. A. M. Laing is to be found in Fred T. Jane's *The Imperial Russian Navy*, beginning from p. 181 where the author says: 'In those days the torpedo was a new weapon, and though possessed by all Powers was more associated with the name of Russia than any other.'

J. DE C. I.

17. (1953.) JETSAM OF A SIGNAL BOOK. Thanks to the kind help of those in the Admiralty Library, I have been able to discover the answer to Mr Wade-Killick's query. The incident of the business part of a Flotilla Signal Book being destroyed and its contents replaced by Miss Agnes Weston's *My Life among the Bluejackets*, with the edges of its pages suitably coloured with red, blue and yellow crayon, did not occur in China; but on board the battleship *Queen*, then, I think, without reference to the Navy List, in Home Waters.

In May 1914, at Sheerness, on board the battleship *Lord Nelson*, an Ordinary Signalman Hutton, of the *Queen*, was tried by court-martial under several charges for disposing of the contents of the signal book, and was sentenced to four years penal servitude. A faily full account of the court-martial appears in *The Naval and Military Record*, the so-called 'Dockyard Liar' of blessed memory, of 27 May 1914, p. 302.

TAPRELL DORLING

17. (1953.) JETSAM OF A SIGNAL BOOK. The following is extracted from my midshipman's journal for the week ending Saturday, 8 June 1912: 'A signalman in the *Kent* threw the flotilla signal book overboard. Divers were sent down to look for it. It was eventually picked up by a sampan.'

I was then in the *Defence*. Other ships present were the *Monmouth*, *Newcastle*, *Cambrian*, *Pegasus* and *Alacrity* yacht; also the destroyers *Welland*, *Usk*, *Ribble*, *Virago*, *Whiting* and *Otter*. I do not remember the story of Agnes Weston's book but I fancy there was a court of enquiry and I recall hearing of experiments in the Captain's bath, which found that the signal book sank in fresh water but floated in salt. After this all signal books had extra sheets of lead attached.

JOHN GARLAND

18. (1953.) HOISTING THE COLOURS. The following information has been supplied by the Director of the Signal Division, Admiralty (Captain R. S. Foster-Brown, R.N.).

'It was certainly the custom in the early nineteenth century for the ratings hoisting the colours to doff their head-dress as a mark of respect. The custom subsequently lapsed with the passing of this form of "Salute".

'In the early part of the twentieth century the custom was partially revived but, since the retention or removal of his cap by the signal rating hoisting or hauling down colours depended upon local orders, the procedure followed consequently varied from station to station.

'The situation has now been regularized and the new edition of Q.R. and A.I., now being printed, directs that "Men hoisting and lowering colours are to remove their caps and place them by the foot of the ensign staff or mast before the ceremony".'

23. (1952.) INFERIOR SHIPS. What began as an enquiry as to the reasons for the alleged inferiority of British designs has turned into admiration of their Russian rivals expressed by two naval officers whose opinions, when it is a matter of opinion, are obviously of more value than mine. Surely, though, it is a matter of fact that, far from the *Rurik*'s resistance saving her two companions, they actually turned back several times to her aid. No doubt the *Rurik* took a lot of sinking—in fact she sank herself in the end, but she seems to have been very soon made into little more than a helpless target. The same applies to the newer Russian battleships at Tsushima; they stayed afloat, but with no power to harm the enemy. It may be true that British ships since 1860 have sometimes been inferior to contemporary foreigners, but to hold up Russians as superior to them seems to me quite unjustified.

R. C. ANDERSON

26. (1953.) PETER SIMPLE. It is surprising that the 'rediscoverer' of Captain Marryatt should not have been able to put his finger on the reference to the Admiralty semaphore about which 'H.P.M.' enquires. 'Peter Simple', chapter LII, gives the incident, though it was slightly mis-described—according to H.P.M.'s query—by Admiral Phillimore, for it was not the hero, but his friend O'Brien, who hastened to Portsmouth on a foggy day to read himself in before he could be superseded. H.C.T.

(Commander K. M. Fardell, R.N., and many others sent similar information. *Ed. M.M.*)

28. (1951.) EARLY GUN DRILL. Since writing my previous answer, I have found further material on this subject in Hutchinson's *Treatise on Practical Seamanship*. On p. 173 of the first edition (1777) under the heading 'On Stationing and Exercising the People', there is the following: 'The exercise of the great guns, as reduced from 40 words of command (as they used to be) to 14, are very well described in Falconer's marine dictionary. But this being for the guns on the common carriages, I take the liberty to mention the difference we used for the swivel carriages'. A short description of the handling of guns on swivel-carriages follows. In the fourth edition (1791), beginning on p. 222, there is a description of the 'Exercise of the Great Guns, mounted on Common Carriages.' It starts by saying that the guns 'are supposed to be properly charged, and run out as customary, but not primed'. Details of the exercise are then given under the headings of the following words of command: 'First, Silence and give Attention to the Word of Command. Second. Take out the Tompions, and cast loose your Guns. Third. Prime your Guns. Fourth. Point your Guns. Fifth. Fire. Sixth. Sponge and Charge your Guns. Seventh. Run out and point your Guns at the Object.' The account of what is to be done on each word of command, though not in the same words and less detailed, does not seem to my inexpert eye to differ fundamentally from that given in Falconer. Hutchinson concludes by saying that when by repetition of this exercise the men have become expert at charging and firing 'they should be trained to fire by platoons, or what I think much better, only to fire every other gun; by which a continued fire is kept up, and no part left unguarded when in danger of being boarded and overcome by numbers; and to go from one side to the other as occasion may require'.

It may be worth adding that the exercise as described by Falconer also appears, without acknowledgement, in *The Elements and Practice of Rigging and Seamanship*, compiled by David Steel, 1794, p. 391. P. L. BUSHE-FOX

REVIEWS

THE PRINCIPLES OF COASTAL NAVIGATION AND PILOTAGE. By LIEUT.-COMMANDER JOHN IRVING, R.N. Seeley Service and Co. Ltd. Price, 6*s*. net.

This is yet another reprint from the Lonsdale Library book *Cruising and Ocean Racing*, and in this instance consists of chapters 22 and 24 from it, entitled 'Coastwise Yacht Navigation' and 'Rule of the Road' respectively. There is every appearance of the reprinting having been done from the original type, but even if this is not so, no attempt has been made to bring the matter up to date, and one can only conclude that the publication of portions of the main book from time to time is intended to afford an opportunity to yachtsmen to buy the work in small parts at 6*s*. each instead of trying to obtain the whole volume whose original price in 1933 was 21*s*.

So far as the navigation chapter is concerned it is of no great importance that twenty years have elapsed since it was written; such things as the Theory of Tides and the Four-Point Bearing, for instance, have not changed in the interval. With regard to the 'Rule of the Road', however, the chapter is hopelessly out of date, for the Board of Trade has given place to the Ministry of Transport and the regulations themselves were drastically revised in 1948 and came into force on 1 January 1954. They are now known as 'Rules', not 'Articles', while the expressions 'steam

vessel' and 'under steam' no longer exist. There is a reference to the *Admiralty Manual of Seamanship*, Vol. I, but this turns out to have been the edition of 1932; since then Vol. I had its editions of 1937 and finally of 1951 (which incidentally contains nothing about the 'Rule of the Road'). Yachtsmen would be better advised to spend 1*s.* on Her Majesty's Stationery Office publication of 1953 if they wish to be well informed of the International Regulations for Preventing Collisions at Sea. H.P.M.

Beans, Bullets and Black Oil. By Rear-Admiral Worral Reed Carter, U.S.N. (retired). The Government Printing Office. Price, $2.50.

One of the biggest problems for the commander of a blockading fleet or of one that is working a long way away from a friendly base, is how to keep his ships supplied so that they are always fit to carry out any operation that he may call on them to do. This was one of Nelson's greatest worries in the sailing ship days, in the days of coal and oil the problem is increased a hundredfold.

This book *Beans, Bullets and Black Oil* is an account of how the United States Navy got over the difficulties of supply during the last war and explains how the ships were fuelled at sea and given all the necessities of life without returning to a base; to quote the subtitle it is 'The Story of Fleet Logistics Afloat in the Pacific During World War II'.

If it is remembered that the book is written by an American for Americans it can be read with much interest and pleasure as it explains quite clearly the difficulties and how they were overcome, of keeping a great fleet at sea. Once the prospective reader knows what the book is about, the title explains itself, but without that knowledge it is somewhat likely to deter the average person, one would have thought.

The volume is nicely produced with plenty of interesting photographs and maps and a very full glossary of abbreviations, which is just as well, as many of these aids to quick writing and talking would not be easily understood by the layman. H.O.H.

Sailing Trawlers. By Edgar J. March. Percival Marshall and Co. Ltd., London. Price, £3. 0*s.* 0*d.*

Mr March is indefatigable, this is the third major work he has produced in a little over three years, and in no way has he departed from the high standard he set himself in his first book. This new volume is a companion one to *Sailing Drifters* and is if anything better than that very good history of the drifter fleet. For one thing the excellent sketches and drawings by the author are produced on a larger scale and are, therefore, that much clearer, the photographs, of which there are a very great number, are better arranged and are not cut down in any way to fit a page. The letterpress as anyone, who has read Mr March's two previous books would expect, is full of information, the types of vessels are described and the differences between the ships of the various ports pointed out. Trawlers, superficially, were all alike as they were all ketches latterly and it needed a fairly practised eye to pick out how a Ramsgate craft, say, and one from Lowestoft differed. After reading *Sailing Trawlers* these differences are made clear and by means of hull drawings it is apparent in what way these vessels, often to the uninitiated so similar, were to be distinguished one from another. Drifters were much easier to pick out, even those of the same rig and from the same district such as the Cornish luggers, the east with their square sterns, the west with their pointed ones; then again no one would mistake a Scottish zulu for a Mount's Bay lugger, who had any knowledge of seafaring matters. One of the most useful and important chapters in the book is that one, which describes in complete detail with very full drawings and plans, the Lowestoft trawler *Master Hand*, this trawler having been built at Rye in 1920 represents the last and finest development of this type of sailing vessel and posterity is extremely fortunate that the author of this book had the skill and enthusiasm to put down on paper the complete details of this fine ship. From Mr March's description and drawings any shipwright of the future should be able to make an exact replica internally as well as externally of a Lowestoft trawler in

spite of the fact that, except for a few that have been turned into houseboats or yachts, every one of these fine vessels from all the trawler ports have now gone and no sailing trawler, as such, any longer exists. Thus this book has just been written in time, and the author must be congratulated on the way he has done it, and also on the very hard work he must have put into the compiling of this volume and the physical hard work in getting the details for many of the plans. Posterity is again lucky in that there are several first-hand and verbatim accounts of life on board a sailing trawler and the way she was sailed and managed, the sort of thing that no amount of research in a few years time will be able to unearth because it can only come from the men who have actually experienced the life; this Mr Marsh has, happily, put down in detail for the future historian and many points are now recorded that would have been completely lost but for this. As has been said earlier in this review, there are many excellent photographs, the book for these alone would be worth having, but coupled with the author's drawings and research it becomes a volume that any member of the Society should make a great effort to obtain and read. N.R.

Four Generations in China, Japan and Korea. By A. C. Hyde Lay. Oliver and Boyd. Price, 15s.

The full history of that unique institution, the Chinese Customs Service, has yet to be told. It is in large measure synonymous with the history of the Lay family; for from 1855 to 1946 there was always a Lay in the Service, beginning with the first Inspector General and ending with the author of this book. The account of their careers constitutes an honourable record of which that family and the Service itself may be justly proud.

The book under review relates briefly the story of the early days, from the inception of the Customs Inspectorate at the time of the Taiping Rebellion, through the halcyon days when three Lays were successively—and for a few years simultaneously—Commissioners of Customs, down to the more troublous times of the author's own experience.

To those who were also serving in China at that relatively recent period, the autobiographical part of the book is of course the most interesting, not least for the many amusing anecdotes interspersed here and there in the narrative, with discreet omission of the names of any who figure to disadvantage therein. (It is surely through inadvertence that no mention is made of Sir Francis Aglen, who was Inspector General from 1911 to 1928?) Stationed as he was at various times in ports at the extreme north, south, east and west of China proper, the author made the acquaintance of almost the whole of his European and American colleagues and is admirably qualified to discourse, as he most entertainingly does, on the events of the last forty years in China and the rest of the Far East.

Mr Lay writes with moderation on the upheaval termed by the Japanese the 'China Incident', which lasted eight years and eventually sent him, with thousands of other trapped Britons, into enforced seclusion in one of the 'Civil Assembly Centres' of Shanghai. He skims lightly over the miseries of those years and rightly so, for there were many compensations, and in the end nearly all of the internees did, contrary to expectation, get away with their lives, though not a few had to land in England in garments bountifully bestowed upon them by the Red Cross, for whom no words of praise would be excessive.

There were other bombs dropped at Shanghai on 'Bloody Saturday' afternoon in 1937 than the two that did such appalling execution. The first to fall disintegrated in the river, directly in front of the Custom House, and was immediately followed by the destructive missile that landed in Nanking Road. There had also been an abortive attack in the Hongkew region on the morning of that memorable day.

The book is excellently produced and illustrated and in view of the quantity of Oriental names to be found on every page, is surprisingly innocent of misprints. However, 'deduced' on p. 164, fifth line from foot, should presumably be 'deuced'.

This is indeed a deuced attractive book. T. C. GERMAIN

Vol. 10 onwards at 10*s.* 6*d.* each (postage 5*d.*). The index will be supplied free to purchasers of a complete volume or sold separately for 2*s.* each.

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